
ANIMATION Contest II—p. 36
AMIGA
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July 1990
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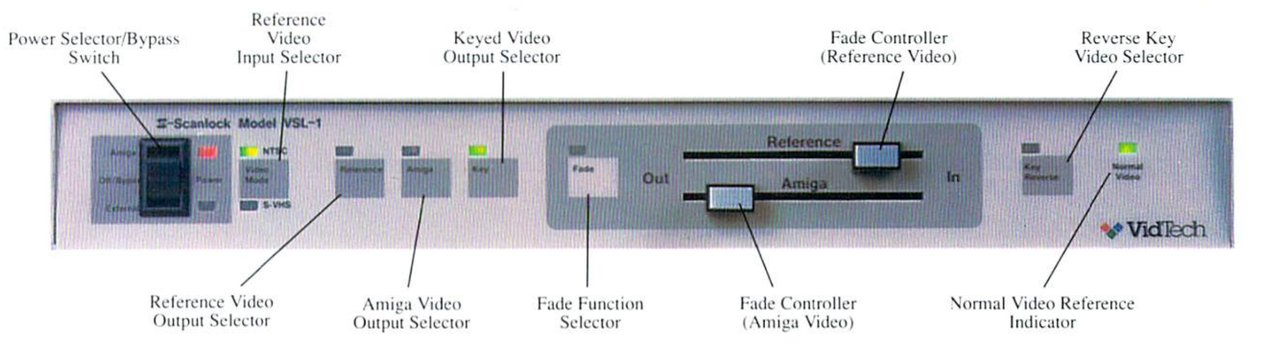
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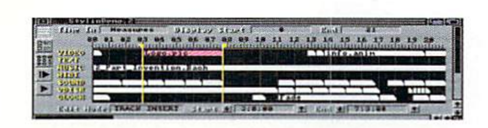




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HOWMAKER

SIX STEPS TO CREATING YOUR NEXT VIDEO





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2. ADD MUSIC

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4. ADD LIVE VIDEO

ShowMaker gives you control over genlocks, videodisc players, and VCRs. Just tell *ShowMaker* when to cut in your video, and it will automatically seek to the correct position and fade in the genlocked signal at the right time. **



5. OVERLAY TITLING

Add titles to your production with *ShowMaker's* built-in Video Titler. You can even run credits on top of Amiga animations and graphics, and overlay the results on video.

6. PLAY IT!

You're done! Hit the 'Play' button and the Amiga will play back your production in real time, automatically synchronizing the music, video, animation, and titling. A true Multimedia presentation. Record your production to videotape for a *first generation Master Tape!*



SHOWMAKER FEATURES

***ShowMaker* is the first program with :**

- Intelligent autoloading of animations and graphics *
- Animation playback synchronized to music in frames-per-beat *
- Intelligent background music looping, for easy creation of sampled soundtracks
- Complete control of genlock functions **
- Video titling over Amiga animation and graphics
- MIDI sound effect support
- External clock control (SMPTE / MTC) of music and animation
- Run *ShowMaker* productions from *AmigaVision*

***ShowMaker* also features :**

- Wait-for-click interactivity
- Production looping
- Storyboarding
- Cuesheet generation with printing

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FEATURES

ARTICLES

COLUMNS



What has a CD-ROM player built into a multitasking CPU housed in a stereo-style case and hooks up to your home-entertainment system? Find out on p. 18.

DEPARTMENTS

REVIEWS

GAMES

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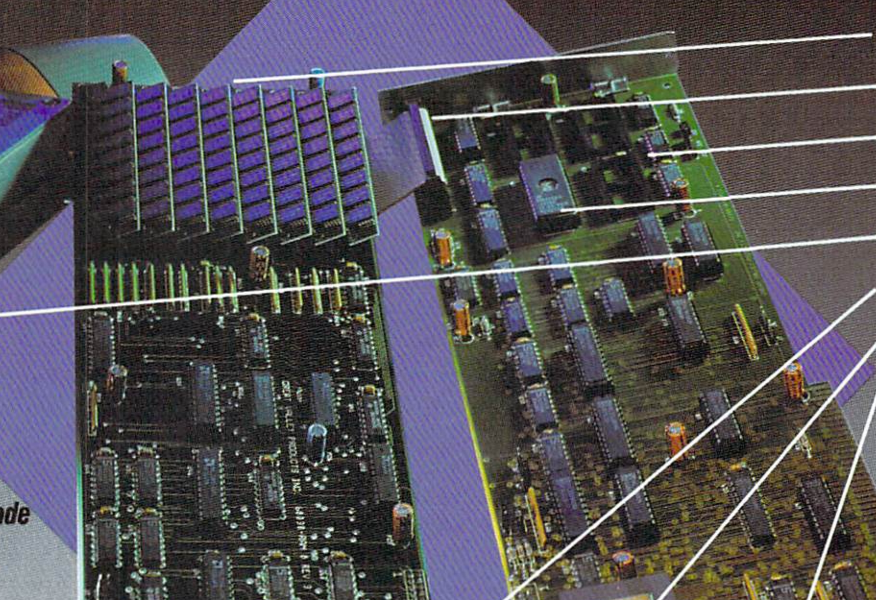
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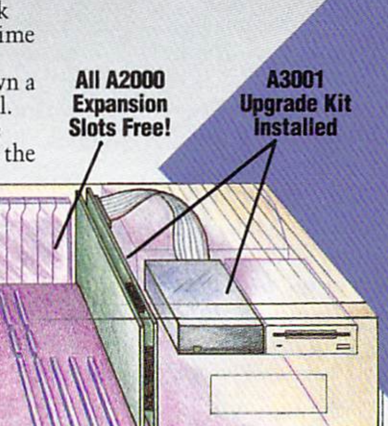
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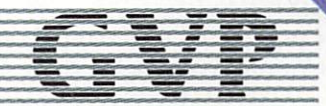
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Hard Disk Controller on 68030 Processor Board.	Y	N	Y
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Fully implements 68030 Burst Mode up to 33Mhz.	Y	N	N



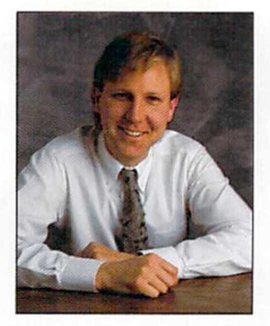
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I DON'T KNOW about you, but after reading the latest articles about multimedia, I'm madder than a flea on a clean-shaven poodle.

You've probably read them, too. They say multimedia's on its way, any year now, and it'll be affordable—eventually. Oh, and isn't Apple wonderful for inventing it, and doesn't IBM throw a whiz-bang of a multimedia press conference? Hey, I may not be flying, but I sure could use one of those tidy little bags the airlines give out.

Fortunately, Commodore is coming to our rescue. Our buddies are going to burst the multimedia bubble and release all the hot air from Apple and the others who filled it. Last month we saw pin number one, when Commodore announced the Amiga 3000 and the AmigaVision multimedia authoring system. With a peripheral or two, this is the ultimate multimedia creation station.

The only thing left to do was build an inexpensive but effective multimedia applications delivery platform. This is simply a machine capable of running applications that include animation, graphics, text, and so on.

According to our sources, it looks like Commodore has done that, too. We hear that they have just sneak-previewed a machine that those in the know call the Baby. Despite our investigations, we still haven't found out its official name. Maybe it doesn't have one. Name or no, this little bugger does it all. It talks, sings, shows video and animation, and, unlike a Macintosh, it doesn't force you to go to Phil Rizzuto for a home equity loan.

In case you haven't read our investigative cover story yet, the Baby is an Amiga 500 in a stereo-style case with a built-in CD-ROM player.

We are excited, but we are usually that way. A few extra scoops in the coffee machine takes care of that. The Baby, though, has us a little more jazzed than usual.

It has also given us good reason to gloat. You see, a rash of stories recently came out describing Microsoft Chairman Bill Gates' vision of a minimum multimedia machine. (Gates could sneeze, and mesmerized reporters would take notes.) According to Bill, a minimum multimedia PC could be built for less than $2000. He made these pronouncements at a recent CD-ROM conference, prompting one Commodore official to flee to where the air wasn't so hot.

Gate's system would include a CD-ROM, an Intel 80286 processor, 2M-bytes of RAM, VGA graphics, and built-in audio. It would run MS-DOS and Microsoft Windows with multimedia extensions. Of course, these multimedia extensions have not yet been built. Nor has the machine.

Okay, you can stop laughing now. But feel free to start up again when otherwise bright people actually try to run multimedia applications on a pea-brain, single-tasking, single-processor system. That's exactly what a PC running Microsoft Windows is, and don't let any marketing stooge tell you differently.

By the time these clowns get their act together, we'll be onto Super Baby, with a higher degree of interactivity, better performance, and better video.

In the meantime, we'll be sitting in front of our TVs fiddling with a real multimedia delivery platform for less than a grand. We probably won't even call it multimedia. We'll just call it our little Baby. ■

Doug Barney

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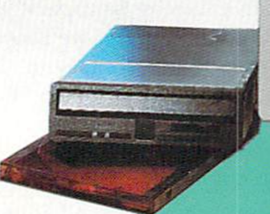
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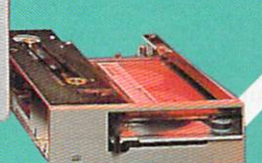
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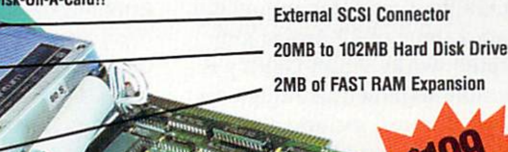


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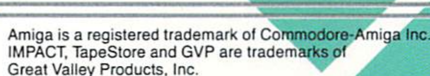
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REPARTEE

Comments, complaints, and concerns from AmigaWorld *readers.*

You Are Not Alone

The statement in your Notepad section (Apr '90, p. 10) that Laurence Gartel's Nuvo Japonica exhibit is the first time a professional artist has had a showing of work produced entirely with the Amiga is absurd. I have exhibited my own work done on the Amiga in two museums and at a juried show. Chances are good that Mr. Gartel and I are not alone in exhibiting fine art generated wholly on the Amiga. The field of computer aesthetics is being forged today by many artists, most of whom work in obscurity.

Robin Chard Cohen
Miami, FL

While finding a large display of Amiga art may be hard to do, Laurence Gartel's show is not the first time a gallery has had a one-man show of Amiga art. At the Abaci Gallery of Computer Art in Portland, Oregon, Amiga art has been featured in both group and one-man exhibits for the past two years. Last year, for instance, I had a show of 53 Amiga-generated works. Abaci Gallery is putting together an Amiga art book that will include about 350 titles selected from over 4000 submissions by 325 artists. Incidentally, fewer than 25 percent of these used a lot of digitization, and only another 10 to 15 percent contained scanned images—not what I would call "many."

Lawrence Payne
Beaverton, OR

Hurray for Harry

I was steaming from the collar when I read Brian G. Wilson's letter (April '90, p. 8), and I contacted the Northrop Amiga Users Group leader to ask that she give him a call. The leader of the group phoned me back shortly afterward to say that CBM president Harry Copperman had gotten wind of Mr. Wilson's dilemma and had called him personally. Thank you, Mr. Copperman, for restoring my faith in Commodore by taking such action! Keep it up, and you will be a perfect role model for the Amiga industry!

Robert Takahashi
Torrance, CA

When I read Brian G. Wilson's letter, I had to double check to see I had not written it! I, too, was interested in adding A2000-series computers to my growing computer-graphics company, and, after researching the Amiga through magazines, I was ready to talk with someone about my specific needs. The authorized dealer in my hometown was uncooperative, and when I called Commodore directly, I got the same treatment as did Mr. Wilson: lengthy, on-hold waits, disconnections, and, when I did get through, cold and unprofessional handling. It's very discouraging to note that as Mr. Wilson lives in California and I reside in New Hampshire, Commodore is losing sales coast to coast. The Amiga seems to be just what I need, but if Commodore can't represent it properly, I will look for something else.

James McCartney
Nashua, NH

The Trouble With Mother

Last fall I had problems with my A2000's revision 6 motherboard. Commodore did not at first admit to a problem, and I had numerous discussions with my dealer, who insisted the trouble was a memory board that I had purchased elsewhere. After many months (I was without my computer from Oct '89 to Feb '90) CBM has replaced my motherboard. The only cost to me was a $32 shop visit, to cover overhead. Maybe CBM is getting its act together. Let's hope so.

Robert Reisinger
Carlisle, PA

Batting a Thousand

Speaking as one of those diehard A1000 fans, I would like to say thanks for your A1000 survival kit (May '90, p. 44). My A1000 has performed virtually without flaw since I bought it in '85. I have extra RAM and a hard drive already, and if a Rejuvenator or DVS-Wonder card and a new Denise chip will bring my machine up to the same level as the A500 and A2000, I see no reason to trade it—especially because these boards cost $400–500 and Commodore's trade offer gives you a barebones A2000 for $999.

Richard B. Erickson
Apple Valley, MN

Use It or Lose It

I bought an Amiga because it offers features and capabilities I want that other machines do not have. This choice is all but invalidated, though, when software doesn't take advantage of these qualities. I feel cheated by the programmer who fails to consider the Amiga's unique capabilities. The Commodore 128 failed because software was never made available in quantity to take advantage of its capacities. My fear is that if we allow developers to get away with producing untailored 8-bit rewrites, we are laying the groundwork for an obsolete computer.

Raymond Young
Bolingbrook, IL

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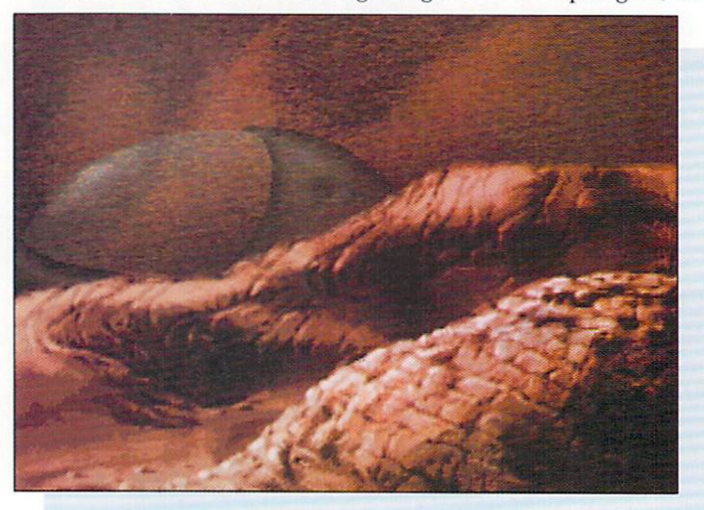
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NOTEPAD

Compiled by Barbara Gefvert Tyson

CONTACT Sports Amigas

THE AMIGA'S VALUE and versatility were apparent in the hectic rush of the seventh annual CONTACT conference in Phoenix, Arizona. The March event brought together anthropologists, sci-fi writers, artists, and space scientists for brainstorming, symposia, and creative projects. (Amiga artists at CONTACT IV produced the Probe Sequence, ultimately part of a PBS documentary.)



The Mars-colony project required an illustration of a dust storm.

This year, a group of talented Arizona artists manned four Amigas around the clock to add enhancements to team projects. They quickly transformed notes and sketches from the group running a Mars-colony simulation into charts, illustrations, and animations. For the thought experiment on the cultural evolution of human beings in space, the Amiga wizards produced unusual synthesized sounds and an animation.

One of the Amiga's most effective uses was as a genlocked component in an on-site video room. A simulation of a next-century Solar System Council had been conducted on the BIX network over several months, and at CONTACT, the interactions of representatives of Earth, Luna, Mars, L-5 and the asteroid belt were carried out via video broadcasts and messages. These were taped in one room, then delivered to the appropriate team, simulating the delay time of a message from those distances. An Amiga with a SuperGen faded graphics in and out during the live taping to enhance the "broadcast." Again and again, the Amiga proves to be the right tool for unusual creative tasks.

—Joel Hagen



Crowd Pleasers

US RESIDENTS WHO purchased A500s after the first of this year are eligible for Commodore Express, an aggressive, customer-service program being implemented in conjunction with the A500's introduction into consumer market channels. The package includes a 24-hour, toll-free helpline for assistance in setting up and operating the A500, plus free computer pick-up and return for in-warranty repairs (proof of purchase is required). Commodore VP for Customer Service Jim Reeder says this is the first of a number of innovative services the company will offer. For details, contact CBM's Customer Satisfaction Dept., 1200 Wilson Dr., West Chester, PA 19380.

According to NewsBytes, the electronic-network news service, NewTek's $1595 Video Toaster, which was officially launched at the National Association of Broadcasters (NAB) show in Atlanta on March 31st, "can do the work of $65,000 in broadcasting equipment" and was the show's "surprise hit." The video-effects card, which you may have seen spotlighted on the Cable News Network (CNN), drew aisle-blocking crowds at NAB. NewTek's demo tape, featuring the comedy-magic team of Penn & Teller, drew applause at NAB and again at the April World of Amiga show in NYC that followed the A3000 debut.

The biggest crowd pleaser at the New York show was without question the A3000, but it was nice to note that Commodore gave equal emphasis to the A500 and A2000. CBM's AmigaVision interactive authoring system rivaled the A3000 for star quality, and, for non-interactive authoring, Gold Disk's ShowMaker was tops. Saxon Industries, in its first appearance at an Amiga show, kept the presses rolling with Saxon Publisher, a professional desktop-publishing system with outline-font support.

Behind closed doors at the sprawling GVP booth, a 50-MHz 68030 accelerator (now still in development) screamed through applications, stopping only occasionally. Pulsar turned heads with a $550 board that allows A500s to run IBM PC software. This slick little unit uses an NEC V30 processor (an Intel clone) running at 8 MHz, and the A500 floppy drive. It ran Lotus 1-2-3, Norton Utilities, and Flight Simulator without a hitch, and, according to a firm representative, a later version will support hard drives.

—BGT and DB

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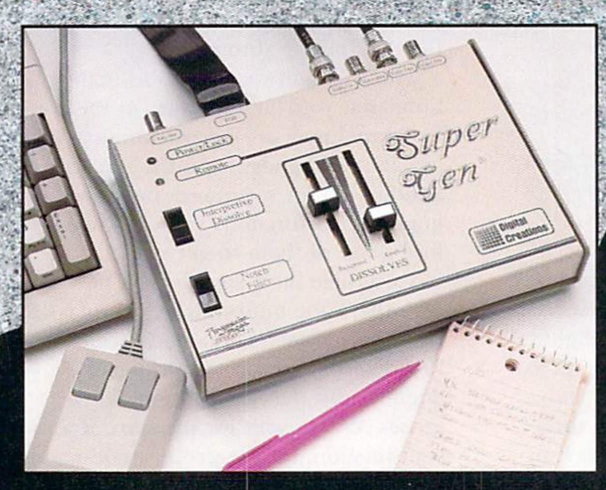
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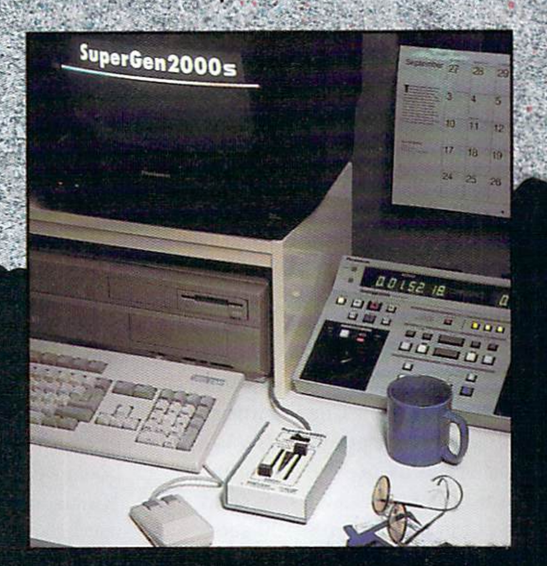
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REVIEWS

Amiga Video Terminal

Take a look at audio tones

By Sheldon Leemon

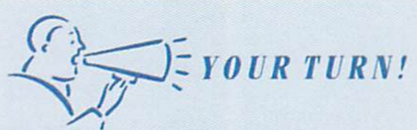
THE AMIGA VIDEO Terminal (AVT) offers dramatic proof of the Amiga's versatility. Using only an inexpensive hardware interface and some software, AVT allows the Amiga to send and receive high-resolution color and black-and-white pictures in a manner that previously required expensive, specialized equipment. This system not only duplicates the function of most dedicated slow-scan and radio facsimile machines, but also provides features previously unavailable on any such device.

AVT's primary function is to send and receive pictures as audio tones over the telephone or two-way radio, using slow-scan television and facsimile technology. This technology differs from that of modems, which send information using a digital technique wherein one audio frequency represents the binary digit 1 and another the binary digit 0.

AVT transmits a whole range of audio tones, with higher tones representing lighter shades of gray, and lower tones representing darker ones (color information is sent separately, afterwards). While this method is not as precise as digital transmission, it is faster. AVT can send a full-screen color picture in 30–90 seconds (versus three to four minutes by 2400-baud modem), displaying each line of the picture as it is received.

AVT's analog approach is not without drawbacks, however. Because the pictures it sends are in a different format than that used by the Amiga's own display, some conversion is required before and after transmission, possibly resulting in a loss of clarity. (Amiga 320 × 200 Hold And Modify mode is the closest match to the AVT format, and loses least in the conversion process.) Overall, though, image quality is good.

The target audience for AVT consists mainly of amateur radio operators (hams), who for many years have transmitted pictures around the world using short-wave radios and scan converters, such as those made by Robot Research. For hams, AVT is a slow-scan delight, allowing them to send and receive all Robot modes (including the Scotty and Martin modifications), as well as those used by more obscure units from European companies. In addition, it provides several proprietary modes that allow the transmission of images up to 320 × 400 in size with 262,144 colors. Although only licensed amateurs can transmit pictures over the radio, they are by no means the only ones who can use AVT. Anyone who possesses an inexpensive short-wave radio is free to receive those audio tones and turn them into pictures.



You must be willing to experiment with AVT, but it does a good job. I have gotten pictures from stations that could just barely be understood through the band noise on voice. The documentation lacks basic information on various functions, but it's not skimpy—the manual weighs as much as the AVT itself. Hams operating on 14.233 MHz can get plenty of help from the many other hams using AVT. Proper tuning is the most important trick to receiving images with AVT; the provided tuning scope helps.

—**Bill Leach**
Apex, North Carolina

Picture Two Directions

The AVT hardware is a box measuring about four by six by two inches. It contains five RCA jacks for audio input from different radios or tape recorders, and a modular phone jack, which allows any two Amiga owners that also own AVT to exchange pictures over the telephone more quickly and conveniently than via modem. To receive slow-scan or radio FAX pictures, you need only connect the audio output of a short-wave radio to one of these inputs and join the AVT unit to the Amiga with the included parallel cable. To transmit pictures, you must connect the Amiga audio output to the AVT audio-in jack, and hook the AVT audio output to the microphone input on the radio. The unit also has a jack for a push-to-talk switch that keys the transmitter automatically.

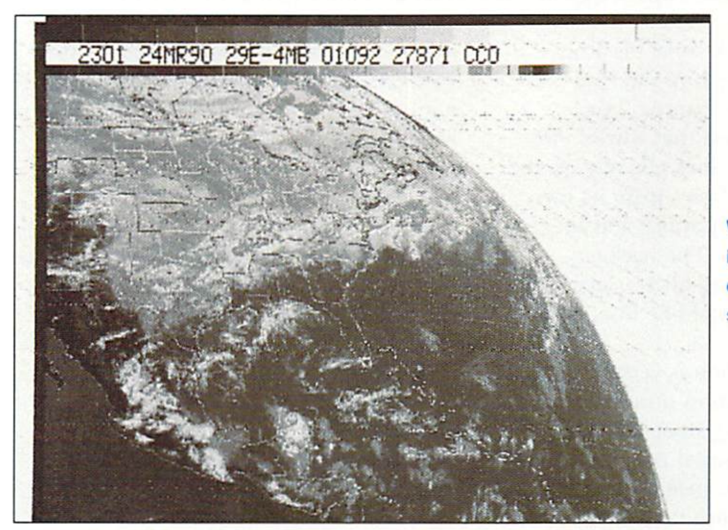
The AVT software offers so many options that your first glimpse of the control panel may be overwhelming. There are about 50 gadgets on the screen, and another 100 or so tucked away inside requesters. Fortunately, you only need to find a few of them to get started.

To receive most signals, you need only two: the Tune button, which displays the audio signal on a simulated oscilloscope to aid zeroing in on the proper frequency, and the Auto button, which causes AVT to wait for the start of a transmission, set the proper mode and start reception automatically. If conditions are not good enough for an automatic start, you can select an individual mode gadget and click Receive. While the AVT software multitasks in most situations, it shuts off all other tasks during reception and transmission.

Sending pictures is a bit more complex. You must load the image into the



Thanks to AVT, this news-wire photo of Winnie and Nelson Mandela appeared on my Amiga monitor the day before it hit the papers.



Whether the weather is cloudy or fair, AVT delivers the latest satellite pictures.

AVT buffer by converting it into one of the AVT internal formats (128 × 120, 256 × 240, or 320 × 200). To convert, just display the image with a viewer program, and then select Grab Screen from the AVT menu. To transmit, select a mode and click on the Transmit button. (After you have converted a picture to an AVT format, you can save it that way on disk to eliminate future conversions.)

Not Just the Fax

In addition to slow-scan television, AVT can send and receive radio facsimile. This mode is similar to (but not compatible with) phone FAX, and is used by a variety of sources to broadcast high-resolution black-and-white satellite weather maps and wire-service news photos. The ability to receive updated weather information is of particular interest to sailors and pilots. If you have 1.5 MB of memory or more, you can receive these photos as 1024 × 1200 images in 16 levels of gray using an inexpensive shortwave receiver. If you have only a meg, the pictures are reduced to 640 × 400.

The AVT software includes a wide variety of image-processing and -conversion facilities. There are tools to correct single lines or entire pictures garbled by background noise or interference, and tools to fix pictures received with out-of-sync color information. The program also includes controls for changing the brightness, tint, or contrast of a picture, and lets you enlarge part of an image or shrink a screen into an inset. It even has rudimentary paint and titling capabilities and a limited cut-and-paste feature.

Besides its many gadgets and knobs, the AVT software can be controlled almost completely via commands sent to its ARexx message port. You can even issue ARexx commands from within the program itself, or assign them to function keys as macros. Using this facility (which requires a copy of William Hawes' ARexx program), you can reduce complex functions to a single step, or even program AVT to receive and save messages unattended.

A Helping Ham

Although AVT offers many powerful features, the software is not particularly easy to use. The layout of the control panel is illogical. For example, some image-processing functions are included in the Synthesize requester, some in the Line Correct requester, and others within the Frame requester. Also, the ID menu does not employ check marks to show which of its alternate selections you have chosen. Even after using the program for weeks, there are some gadgets I still have not figured out. The manual, while providing some good general background information, lacks organization and depth. It does not describe any of the gadgets in the FAX requester, for example. Fortunately, ham radio operators can get help by talking directly with other AVT users over the radio.

AVT opens some fascinating possibilities to Amiga owners. By the time you read this, version 3.1 of the software (with such new features as support for Black Belt Systems' HAM-E device, which extends the display to 262,144 colors at once) should be ready. If nothing more, AVT is opening the eyes of radio amateurs all over the world to the Amiga's power and versatility.

Amiga Video Terminal
Advanced Electronics Applications Inc.
PO Box C2160
Lynnwood, WA 98036
206/775-7373
$349.95
One megabyte required. ►

FAST FAX

Do some FAX checking

By Louis R. Wallace

FAX MACHINES HAVE become a part of everyday life in American business. Traditional FAXes are flatbed scanners that transmit images via phone lines. Lately, however, an increasingly popular form of the FAX machine has been the PC FAX—essentially a high-speed modem with software dedicated to sending and receiving transmissions. MichTron brings this technology to the Amiga in the form of Fast FAX.

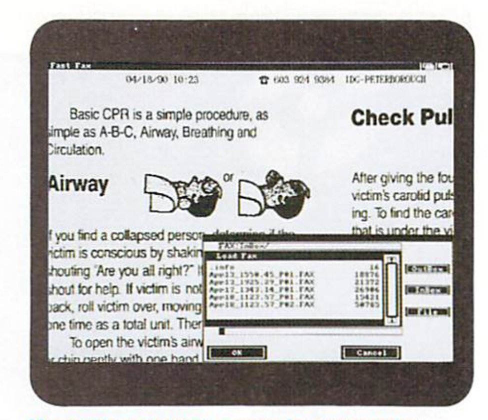
While most PC FAX units on other platforms are provided on internal cards, Fast FAX is an external box (10.5 × 5.5 × 1.5 inches) that works with all Amiga models. It does not rely on the Amiga's power, but draws from its own power supply—an important consideration for A500 owners. The package comes with software, so all you need besides your Amiga is a phone line, and you're ready to go.

Hardware installation is very straightforward, and takes just a minute or two. Simply connect the 8½-foot Fast FAX cable to your Amiga's serial port and hook up the power supply. Installing the non-copy-protected software takes a little longer, as you must alter your startup sequence, assigning the location of the FAX software and copying the appropriate files from the supplied floppy to your own system disks (you can easily install the software on a hard drive).

GIVE AND TAKE

With Fast FAX installed, the telephone line hooked up, and the system running, you are ready to receive FAX transmissions. Unlike standard FAX machines that print incoming messages onto paper, the 9600-baud Fast FAX stores received files to whichever disk device you have specified. You can view these messages on screen (you must scroll through the hi-res interlaced display to see a full-page FAX), and print them if you so choose.

Once you set up your machine and give out your FAX number, you will likely want to be ready at all times to receive transmissions. Fast FAX's Sleep mode keeps the software running in the background, waiting for incoming messages. When you are using another program and a FAX message comes in, the Fast FAX software signals you by displaying an asterisk in a small Workbench window that you keep in the foreground. (In addition, LED lights on the front of the hardware unit flash to give you the signal.) The program multitasks nicely; it caused no problems while I was using other programs.



Messages received appear in a requester.

Sending documents via Fast FAX is very different from transmitting with other FAX machines. There is no scanner, so you do not feed in sheets of paper. Fast FAX can transmit only machine-readable data: ASCII text files, such as those produced by word processors, and data entered into the computer through ditgitizing. One benefit of not employing a scanner is that text files, never having been subjected to copying, come through in top form on the receiving end.

You can add any IFF graphics to text documents by using dot commands especially designed for signatures, cover pages, and letterheads. Because only two colors are transmitted, you must use pattern filling from a paint program to accommodate shading. Fast FAX can access graphics only after you have converted them to Fast FAX format using a supplied utility program. Images so formatted can be called up again and again; just include the appropriate dot command in the ASCII file to insert them.

CALL ME ANYTIME

The Fast FAX software has a phone-book feature, into which you can enter company names, names of contact persons, and their FAX numbers. Using a Scheduling menu selection, you can send documents to multiple parties on a regular basis. Just set the scheduler to send a specified document to a list of phone-book entries at any time you determine. A log of all FAX usage is maintained through the Transaction and Schedule Log options, where each incoming and outgoing FAX is recorded.

Besides its lack of a scanning capability, the only drawback I see with Fast FAX is that in order for it to accept calls around the clock, you must leave your Amiga running constantly. While I have no problem recommending the unit, I would choose a scanner-type machine over Fast FAX if money were no object. Such units are more convenient because they do not require machine-readable files; they will accept anything on paper. Fast FAX does its job, though, and for far less than a decent scanner-equipped FAX machine.

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Auburn Hills, MI 48075
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PAGESTREAM 1.8

Stable and able

By Chris Dickman

WHEN IT WAS released just over a year ago, PageStream 1.6 showed great promise. Its feature set closely matched, and in some key ways improved on, that of Gold Disk's Professional Page, which had always had the realm of professional-quality layout applications to itself. PageStream 1.6 was far too unstable to recommend, however. It crashed frequently and garbage accumulated on the screen. With version 1.8, Soft-Logik is on the right track. The program is now stable enough to use for production, and screen garbage has been greatly reduced, although not completely eliminated. (For a review of version 1.6, see p. 78 in the July '89 issue.)

PageStream still has the edge in pro- ►

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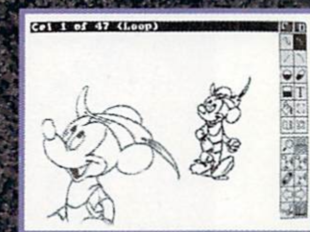
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viding user-definable formatting style tags as well as the ability to rotate, slant, or twist objects in one-degree increments. Typical of the program's typographic niceties is its approach to automatic and manual kerning (adjusting the inter-character spacing of letters). Professional Page also lets you do this, but PageStream provides more control with its new ability to display and edit font-kerning pair tables. If you like the letter pair AV always to be set tightly together, for example, you can specify its inter-character space in increments of hundredths of an em. The pair-tables feature would be even better if you could actually see the space between the two letters on screen while you adjusted values, as you can when manually kerning individual pairs directly on the page.

FEATURE CREATURE

Although PageStream compares well with Professional Page in the feature war, the most important point for professional publishers is how well it displays and sets type. With its most recent release, Professional Page added support for Compugraphic scalable fonts, ensuring not only quality PostScript output, but remarkably good dot-matrix and screen fonts. This is the new standard against which all Amiga desktop publishing programs must be measured.

PageStream, in comparison, still uses bitmap screen fonts, which, while adequate, can't hold a candle to the crisp Compugraphic screen fonts of Professional Page. The scalable Compugraphic fonts also provide superior output on non-PostScript printers, although the PageStream fonts are a close second.



I had to be careful working with early versions of PageStream, because they were buggy and prone to frequent crashes. While 1.8 is not perfect, it is much more solid. I have managed to crash the upgrade with five-meg files, but can get around this by working with two- and three-meg sections at the same time. I've had trouble adding graphics created in PageStream to imported bitmaps: The position shown on screen does not match up with what is printed. Zooming in close usually helps, but the zoom function is poorly implemented and subject to crashing. As for support, I have never been able to reach Soft-Logik by phone, and my one letter netted a worthless reply.

—Bill Leach
Apex, NC

(PageStream comes with 10 fonts that use Soft-Logik's own scaling technology to support both impact and PostScript printers, and 16 other disks containing three styles each are available from Soft-Logik and from retailers for $39.95 apiece.) While these do the job, professional designers will feel more comfortable using fonts from a traditional supplier like Compugraphic.

If your needs are less critical and you can make do with knock-off interpretations of classic font designs, the Page-

Continued on p. 78

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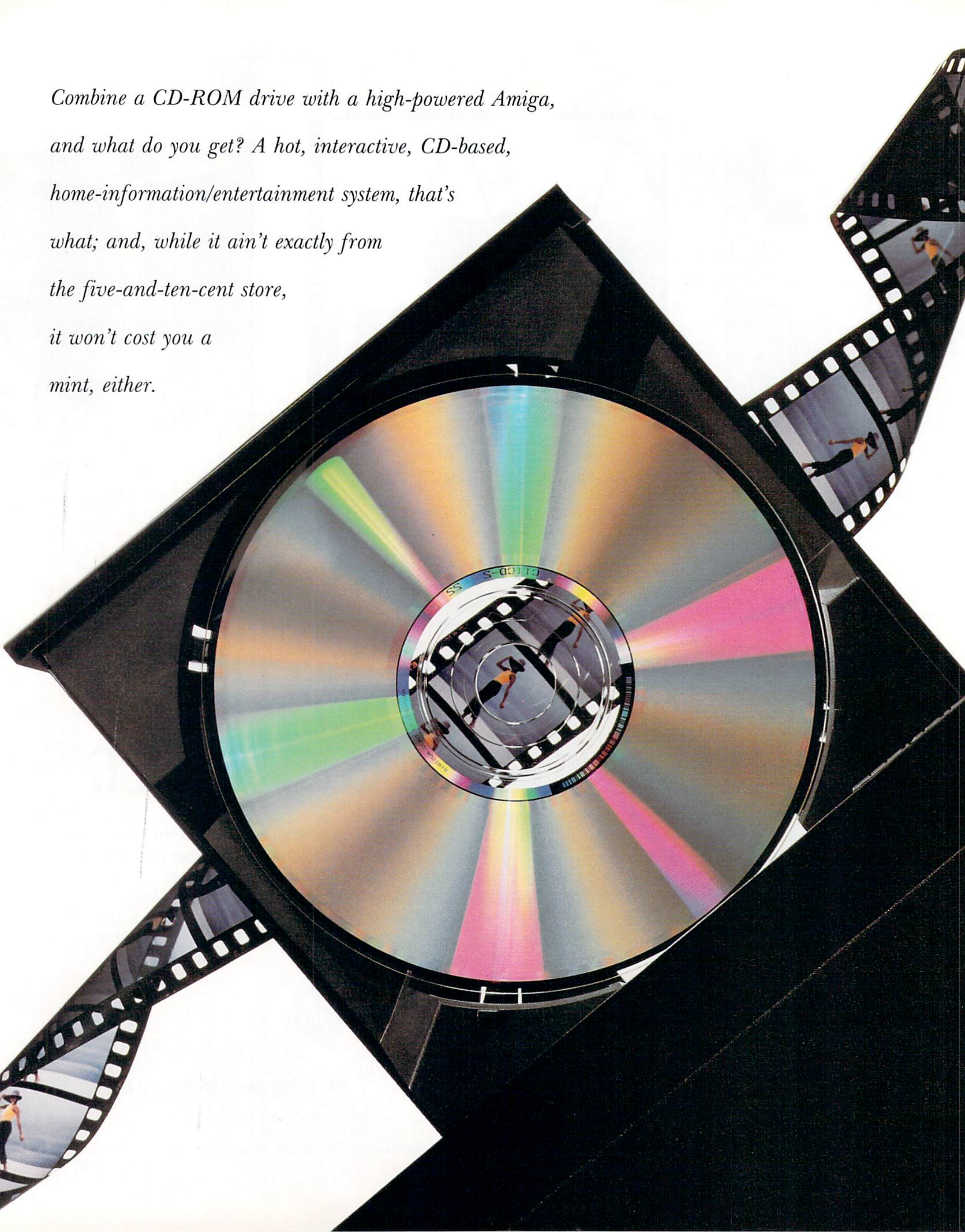
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it won't cost you a
mint, either.



MILLION DOLLAR BABY

By Doug Barney and Louis R. Wallace

IMAGINE YOU'RE JUST home from the office. You sit back in the Lazy-Boy, kick off your shoes, turn on the tube, and click a few buttons. A menu appears, offering information about Paris, a terrific city.

You select the Louvre option, and soon you are admiring the "Mona Lisa," by Leonardo da Vinci. You forget where Leonardo lived, so you select the Personal History icon. "He's from Tuscany? I thought he was Venetian!" you exclaim after scrolling through a few crisp, bitmapped paragraphs.

No. This isn't a scene from *The Jetsons*. It's just typical of the type of application expected to be offered by a deceptively simple-looking new device currently doing business on the q.t. under the informal moniker "The Baby."

While Commodore has been hammering out final details of the new machine (expected to be released later this year), we went behind the scenes—meetings in parking lots, seedy diners, dive bars frequented only by motorcycle gangs and techies—to tap some "deep-background" sources. The result is this *AmigaWorld Special Report*.

BABY: ONE SMART KID

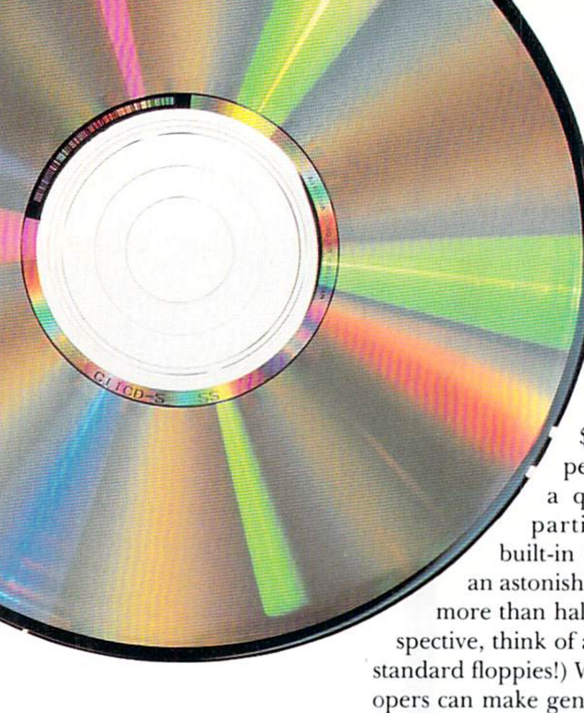
If you have heard of "interactive compact-disc technology" at all, chances are it was being mentioned by so-called industry experts in conjunction with such phrases as "maybe next year. . .or perhaps the year after that." Well, as always, these "knowledgeable industry sources" forgot to take a look at what Commodore has been up to. But, as the company has been a leader in bringing innovative consumer electronics to market for nearly a decade, it comes as no surprise that Commodore will be the first to produce a CD-based, multimedia, home-information/entertainment system at an affordable price.

The Baby is actually a marriage of technologies. In addition to a CD-ROM drive that can play standard audio CDs, it also has infra-red devices that allow you to control it from the couch, just as you would your TV or VCR. This alone, of course, is not interactive compact-disc technology, so many people will ask, "What is it that gives Commodore the edge over the other would-be interactive CD-ROM developers?"

The answer, obviously, is a multitasking, high-powered Amiga! Although The Baby has been designed to look much like a stereo component, this hot, audio/visual compact-disc system is every inch an Amiga. It combines the core innards of an Amiga 500 (a 68000 CPU, the Enhanced Chip Set, and one megabyte of RAM) with a state-of-the-art CD-ROM device. The unit can be tied into a home stereo system and then to the TV, delivering a number of functions. It can act as a plain old CD player or provide new forms of home education and entertainment. But make no mistake: It is the Amiga that acts as the brains ►

CAUTION: WORK IN PROGRESS—Details of "The Baby" are obviously subject to change over the next several months. While the information we have culled from our sources is accurate as of this writing, we make no guarantees about the final version as it will be when—and if—it ships.

PHOTOGRAPHED BY ED JUDICE



and brawn of this first-ever interactive CD-ROM system.

The Baby offers all the benefits of a sophisticated computer, plus high-quality audio, ease of use, massive storage, and an unprecedented use of still and moving images—all for a sum rumored to be less than $1000! The system is even expected to run full-motion video in a quarter-screen window. What is particularly exciting about Baby's built-in CD-ROM player is that it offers an astonishing amount of storage capacity—more than half a gigabyte. (To put that in perspective, think of a half-gigabyte as more than 500 standard floppies!) With that kind of potential, developers can make generous use of sound, high-quality images, partial-screen video, animation, and, of course, reams of text.

That all sounds plenty fine to us. At this price, and with this technology, Baby is sure to send consumers scurrying off to stores and competitors racing off to their drawing boards. People will have to cool their jets for a while, of course, but let's hope Commodore gives birth to Baby soon.

That shouldn't be too hard to take, however, and while you're waiting, think of this: All of Baby's capabilities are expected to be offered to existing Amiga owners through a CD-ROM peripheral. This peripheral should also include a file system modified to handle CD-ROM data. But because this may cost as much as $600, many Amiga users may simply opt to buy a full Baby.

For Baby customers who catch Amiga fever, a number of options should be available that will turn the new system into a full-fledged Amiga. These include drives, keyboards, joysticks, genlocks, and more. The system will come standard with a remote-control device having function keys, pointer keys, and so forth.

Clothes Make the Child, Too: Baby Applications

The Baby itself may be exciting, but the real proof will be in the applications pudding. The vast CD-ROM storage space offers developers incredible freedom of expression. CD-ROM itself will allow for the creation of applications never seen before on any system.

Add to CD-ROM a multitasking, graphics computer such as the Amiga, and you get a true, multimedia-applications server. We will see games with unparalleled backgrounds, levels, and interactivity, as well as easy-to-negotiate interactive information (kiosk-style), education, and training systems. We may even see a brand-new way to distribute music—one that includes images of the band, histories of the players, or new ways of selecting songs.

These applications are sure to have a distinct Amiga look and feel, because by and large they will be developed with popular Amiga tools. Developers are apt to use programs such as DeluxePaint III to create backgrounds and design characters, and to add musical scores and sound effects with a wide variety of current Amiga sound and music programs.

The fact that the Amiga is an ideal platform for digitizing and manipulating images and sound will help ensure that Baby applications are both pleasing ►

Exciting Prospects for Amiga CD-ROM

EVER SINCE WE started our research into the "Baby" project, I have been excited by the possibilities it opens up for the Amiga and, more importantly, by the implications it has for the Amiga user.

If Commodore successfully enters the consumer market with a sophisticated multimedia home-information system (note that I did *not* say a game machine), one obvious benefit to the Amiga community is credibility. With major technology giants working on some form of consumer interactive CD for years, it is a feather in Commodore's hat that it—and not Sony, Philips, or Hitachi—is the first to introduce a product. This credibilty could easily spill over to other products dear to our hearts.

More tangible benefits will come with the advent of a CD-ROM drive for existing Amiga systems. While software designed for the Baby will undoubtedly be impressive, there are many more traditional computer-based CD products that will follow in Baby's wake—a prospect to which I am eagerly looking forward. It is obvious Commodore is showing foresight in this area, too, because a quick scan of the 1990 Developers' Conference (scheduled to be held in June in Atlanta) indicates Amiga developers will be tuned into CD. At least two sessions on the subject are planned, "Introduction to Amiga CD" and "Publishing and Selling CD-ROM Software." As anyone who has ever attended Dev Con can attest, it is almost a sure bet that topics of individual sessions eventually find their way into the reality of the marketplace. When you consider that the PC and the Mac have had conventional CD-ROM technology for some time, all I can say is that it's about time for the Amiga to roll up its sleeves and take over a leading role. □

—LRW

Surveillance Report: Baby's Co-Conspirators

FASCINATING AND SOPHISTICATED piece of hardware though it is, Baby would probably wind up as just another intriguing "black box" without even more sophisticated software. With that in mind, I investigated what kind of applications might be available when Baby ships. What I found makes for a pretty impressive dossier.

World Vista, one of several products on the way from Applied Optical Media, is reportedly an information resource containing a huge database of topological and thematic maps. According to our sources, World Vista will have a hypermedia-style interface: You select an area of interest, and the program displays photographic-quality images of local or natural landmarks, as well as scenes depicting the region's culture. You should also be able to call up a wide range of statistics on the selected area, examples of music common to the country, and audio samples of the residents speaking in their native language. In all, the CD will house over 400 megabytes of data.



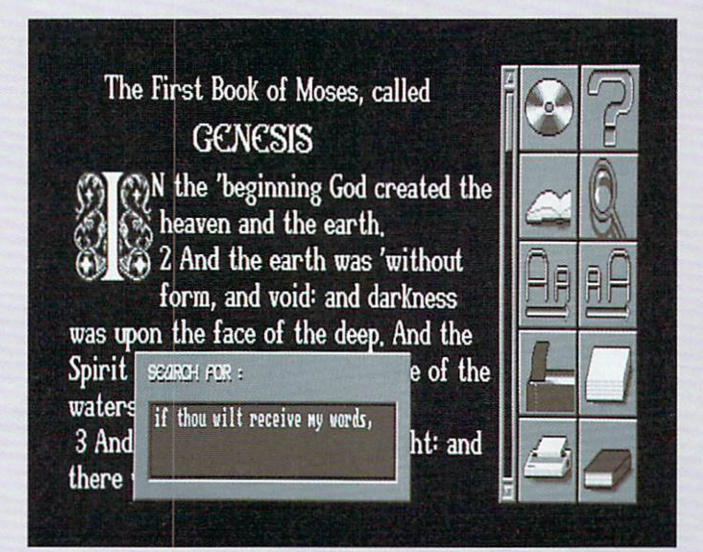
Paris is just one of the fascinating areas you'll be able to explore in World Vista.

If you prefer history to geography, get ready for the **Timetable of Science and Innovation** and the **Timetable of Business, Politics, and Media** from Xiphias. Aimed at students, these interactive explorations of history are expected to sport an interface in which everything on the screen is "hot." If a picture or phrase piques your interest, you can click on it to view further related information.

Each disk reportedly contains 200–300 megabytes of data. Xiphias's long-range plans for Baby are equally hot. We also hear that the company plans on several additional titles, including the **American Heritage Illustrated Encyclopedic Dictionary**, a **Betty Crocker Recipe** disc, and a **Family Medical Encyclopedia**.

Tiger Media of Downey, CA is working on some similar educational projects. **How Things Work** will be a series of animated educational exploration CDs.

Across the Atlantic, Animated Pixels of London has two lofty projects in development. The first CD promises to combine the **Official King James Bible** with



Imagine Johannes Gutenberg's astonishment if he could hold a CD containing not one, but two, versions of the Bible.

the **New International Bible**. This hypermedia, icon-driven program will let you read passages, study the illustrations, and instruct the machine to read the Bible to you via the Amiga's built-in speech synthesizer.

The Complete Works Of Shakespeare promises to have a similar hypertext-style interface and plenty of illustrations. According to our latest information, both disks will be priced at under $100, most likely in the $50–$75 range.

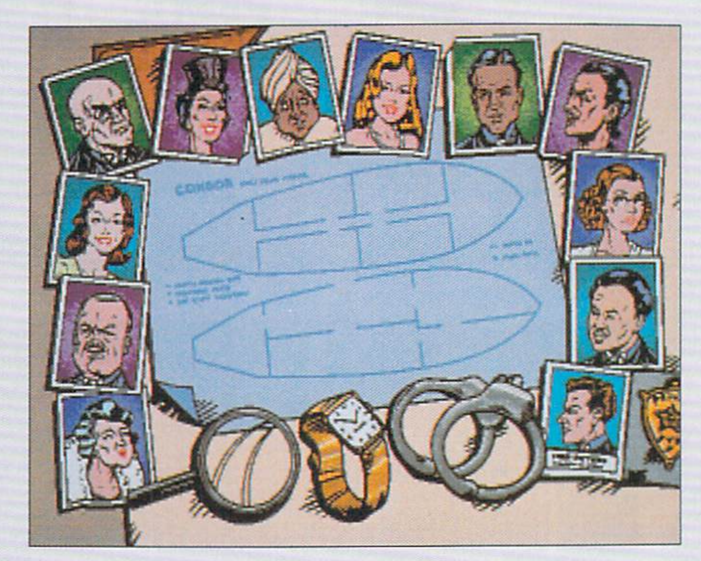
Don't be fooled into thinking that Baby will be strictly an information box. Babies need to play, too. Tiger Media's **AirWave Adventure: The Case of the Cautious Condor** is a graphic murder mystery that casts you as the detective. Imagine a cross between a 1930's detective comic book and a radio drama. The disk is supposedly crammed with two and a half hours of audio, over 700 original pictures, and more then 200 scenes. Now imagine trying to solve such a mystery in 30 real-time minutes. Even more mind-boggling, this 320-megabyte game is expected to ►

retail for $49.95, no more than a traditional computer game.

Reaching farther back into history, Virgin Mastertronics is working on **Spirit Of Excalibur**, which is set just after the death of King Arthur. As a loyal Round Table knight, you must complete six scenarios, such as locating Merlin or Lancelot, while avoiding the minions of evil. Expect to be able to explore over 120 interior and exterior scenes, each of which is accompanied by sound.

If you'd rather make your own entertainment, you should check out my final discovery—Gold Disk's **Personal Video System**. A productivity/creativity package for home-video users, the Personal Video System CD reportedly contains video-titling software, a paint program, and sophisticated, VCR-control software that promises to make programming your home VCR easier—if you can drag yourself away from Baby long enough to watch a tape, that is. □

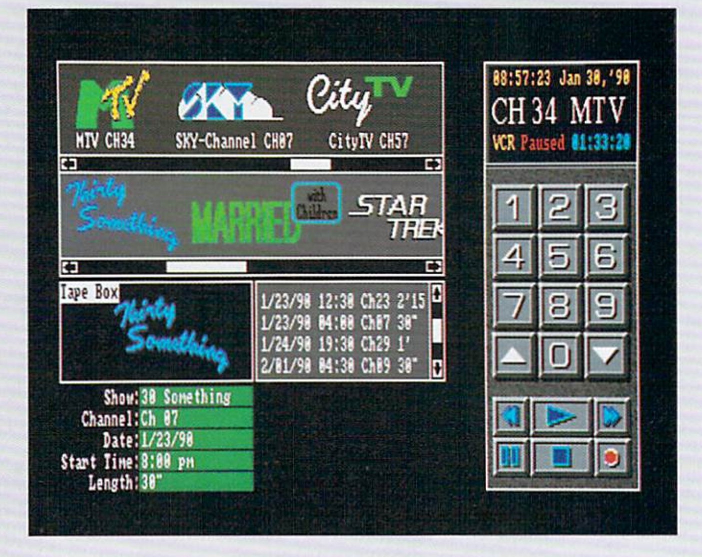
—LRW



The Case of the Cautious Condor includes a cast of curious characters.



In Spirit of Excalibur, beware the scheming Morgan LeFey and her ill-begotten son.



The Personal Video System should facilitate your VCR programming no end.

to the eye and stimulating to the ear. For home use, this is sure to beat reruns of *Mork and Mindy*; for developers, it could be the challenge of a lifetime.

A slew of vendors are already working on titles. While some are simple ports of existing Amiga products, many will exploit the open spaces of CD-ROM with more sophisticated images, animation, and greater amounts of information. (See the sidebar "Surveillance Report: Baby's Co-Conspirators" for specific applications already under development.)

PARENTING: AMIGAS MAKE GOOD DADS

The appeal of Commodore's new Baby is two-fold. As we have already said, it incorporates a rich, new variety of applications possibilities through its unique inclusion of a built-in CD-ROM drive. The Baby, however, also benefits from the Amiga's own architecture. The Amiga's custom chips provide snappy multitasking, meaning that the unit can handle all sound, graphics, and mouse operations as separate, though simultaneous, tasks. These custom chips are likely to make The Baby the most interactive, inexpensive, multimedia-delivery platform for years to come.

Amiga users who have been spoiled by true multitasking will have to forgive Baby's limitations. Multitasking is expected to have a different definition on the new machine. The system assumes that only one application is running at a time. Applications, however, are free to multitask "within themselves." Developers can, if they choose, override this feature and build applications that will work with other applications. These, however, will be subject to the system's one-megabyte RAM limitation.

Creating The Baby was not as simple as sticking a CD-ROM drive in an Amiga and building a new case. Commodore had to mesh the CD-ROM technology with that of the Amiga. Many of these efforts focused on the creation of a special file system that would work with The Baby but also allow existing Amigas to access and manipulate external CD-ROM devices. The new file system is reported to be an extension of the Amiga file system, not a full replacement.

Because many Baby customers will be unfamiliar with the Amiga, Commodore is designing a new user interface. This promises to be so easy to use that you can tell it what to do while sitting on a couch eight feet away.

The Baby opens up an entirely new world for the Amiga community. Applications can be delivered on the more stable CD-ROM format, and will be able to include more code, images, and interactive tutorials. A whole new class of applications that truly fulfill the promise of multimedia will be available, at an attractively affordable price.

Even if all you care about is playing Baltic Avenue-priced games, Baby will enable you to do it with Park Place style and panache. ■

In League With Baby

Animated Pixels
Albemarle House
Osborne Rd.
Southsea
Hampshire
England PO5 3LB
0705 291 866

Applied Optical Media Corp.
18 Great Valley Pkwy., Suite 160
Malvern, PA 19355
215/889-9564

Gold Disk
PO Box 789
Streetsville
Mississauga, Ontario
Canada L5M 2C2
800/387-8192
416/828-0913

Tiger Media
10810 Paramount Blvd., Suite 201
Downey, CA 90241
213/862-5591

Virgin Mastertronics Inc.
18001 Cowan, Suites A & B
Irvine, CA 92714
714/833-8710

Xiphias
8758 Venice Blvd.
Los Angeles, CA 90034

Baby's Jacket in Brief

SPECIFICATIONS AS OF PRESS TIME

Motorola 68000 running at 7.16 MHz
1MB RAM
Internal nonvolatile RAM
CD-ROM drive

Interfaces (rear):
- External disk interface
- RS-232 serial interface

Can use plug-in keyboard and remote control instead of infrared devices

Interfaces (Front):
- Stereo headphone jack
- Infrared controller jack

Video Outputs:
- Digital RGB, analog RAGB
- Composite color video, S-Video, and RF (as option)

Options:
- Infrared keyboard
- Infrared trackball
- Infrared joystick
- Expansion module with floppy drive
- Module can also house a modem, hard drive, etc.
- Genlock

Miscellaneous:
- Real-time clock

3-D GRAPHICS

FAST FORWARD

A rundown on what you may expect from Amiga 3-D developers in the near future.

Maybe Macbeth could bewail a tomorrow that "creeps in this petty pace," but Amiga 3-D fans need not have any such worry. An exciting future in 3-D graphics and animation is looming up on the horizon, and it's moving so fast that it may engulf the present before we realize it.

At least that's the picture that we have been able to draw after talking to quite a number of Amiga 3-D software developers over the past several weeks. "More powerful," "faster rendering," "greater sophistication and versatility," "added animation capabilities," "more intuitive and easier to use". . .these are the kinds of things we've been hearing lately. And all of it still applies to the existing range of Amiga models—not to some fancy, expensive workstation configuration of the future.

So, come join us in time-travel mode for a quick trip to tomorrow, and discover what some of the major players in the Amiga market are planning for the not-too-distant future.

HI-HO 'SILVER' AWAY: HELLO IMAGINE!

Although the powerful but sometimes difficult **Turbo Silver** (SV, $299.95; 3.0, $199) will remain functional, **Impulse Inc.** will soon release its logical extension. The new product, which has been in the works for two solid years, will be called **Imagine**. According to Impulse president Michael Halvorson, the product is based largely upon the suggestions and criticisms of many a Silver user. The estimated shipping date is May 31, 1990, and the price is expected to be $350. Registered Turbo Silver owners can update for $150, providing they order within 60 days of the shipping date.

Among other things, Imagine includes new ways to edit and to render objects. Because Imagine is an all-new product, there will be a learning curve involved.

A brief rundown of the basics goes as follows: The program will have two object editors. The first, Forms, allows you to create a 3-D object from a 2-D perspective. Forms uses point movement in three distinct windows to create a form or mold of the object. Forms creates a rough, "first-cut" view of the object. According to Halvorson, it should ease the burden of creation for the user, because one need worry only about the accuracy of the object from two profile views.

With the second object editor, Detail, users can take advantage of Boolean math to perform a variety of unique functions. Among numerous operations promised by Impulse, you can "carve" out areas of points, "drill" objects through other objects, or "mold" objects around other objects.

"Attributes" of each object created—colors, refractions, reflections, specularity, smoothness, textures, shading, size, and so forth—can be manipulated under specific user control and also can be animated.

The Animator component of Imagine, according to Impulse, is designed to create more lifelike animation. In addition to the geometric-animation capabilities of standard ray-tracing programs, Imagine also offers a Stick Figure feature. With it, you can create a complex figure composed of detailed separate segments that are connected at the natural joints, and then animate it using a technique known as object cycling. (A wide variety of "cycles"—walking, jumping, sitting down, throwing a ball, and so on—is possible.)

Once the Form has been created, given Detail, and linked to the movements of the Stick Figure, you can then determine how separate animated objects will interact. You can place props, determine the speed of motion, and plot the direction of movement of objects.

Halvorson promises that Imagine will

AND ANIMATION TO THE FUTURE

By Doug Barney and Dan Sullivan

give users the ability to work with genlocks and live video, so as to create "rotoscoped movements of the Stick Man" that will allow "perfect control over all the aspects of character movement *à la* Disney creations."

Other Imagine features include morphic changes and several new or improved rendering modes: Full Trace, Solid Model, Primitive Model, and Wire Frame—which can be employed in either "Quick" mode (leaving the lines in the backs of objects for extra-fast rendering) or "Hidden Line Removal" mode (removing the offending lines for clarity or for unusual special effects).

'Progressive' Rendering: 3D Professional

Progressive Peripherals & Software, provider of two CAD packages (IntroCAD and UltraCAD) and several other Amiga graphics programs (PIXmate, Animation Station, and so forth), also plans a brand-new entry in the 3-D modeling and rendering field. **3D Professional**, scheduled for release in late May 1990 at a price of $499.95, promises to be a user-friendly editor, combining many of the best features of existing packages and offering other options unavailable on current programs.

3D Pro includes specialized object-creation tools, such as lathe, conic, and extrusion editors. It also employs fractal mathematics in the creation of heretofore difficult-to-create objects, such as landscapes, ground, and trees. The tree editor is especially interesting, as it has more than a dozen user-definable options that let you create custom trees and bushes with detailed leaf formations.

Other aspects of the editor allow you to convert any IFF Amiga brush into a 3-D object, and also to import objects from most of the existing Amiga 3-D programs, such as Sculpt-Animate (Byte by Byte / Centaur), Turbo Silver (Impulse), VideoScape (Aegis / Oxxi), Forms in Flight (Micro Magic / Centaur), and 3-Demon (Mimetics), as well as the Atari's CAD 3D and the IBM PC's AutoCAD.

3D Pro offers a variety of rendering options definable for each object—including color, several different textures, and materials. PP&S has not included a ray-tracing option, preferring instead to use Phong Shading for faster output. A ray-tracing module, however, is promised for sometime soon after the release date.

3D Pro can output using low- and high-resolution modes and HAM mode. It can also use 24-bit frame buffers, such as those from Mimetics. Additional output includes X-Specs, RGB, and PostScript formats. The program includes animation-generation features that can be controlled manually, by a key frame, or via scripts.

3D Professional is slated to come with a two-hour tutorial tape and three manuals of documentation.

Oxxi: On the 'Move'

Oxxi Inc., which now owns Aegis Development, has also been busy. The firm just released **Pro/Motion** ($99.95; also will come packaged with VideoScape 3D, and current owners of that package may upgrade for $74.95), a package designed to let users "easily design simple and complex motions in three dimensions, on multiple screens and windows," according to the firm.

Pro/Motion is designed primarily to work with VideoScape, and automatically writes VideoScape 3D motion, camera, and setting files based on so-called Object Geometry files. Put simply, the user can now work with props and camera motions in simple point-and-click fashion to create movement, rather than using the less intuitive method of entering numerical coordinates to create motion files.

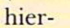
The product contains other innovative features, including Wind (where an ob- ►

ject can be affected by a wind source), Magnetism (where objects have a positive or negative attraction), and Gravity (which assigns positive [down] or negative [up] gravity to an object).

Someone Borrowed, Something 'New'

Speaking of VideoScape 3D, that program's originator, Allen Hastings, has been quietly working with **NewTek** for the past two years on an elaborate and, reportedly, very powerful 3-D animation system. Perhaps trying to avoid too much advance publicity, as was the case with its long-anticipated Video Toaster released just recently, NewTek has opted not to show the new rendering package before it ships (scheduled for later this summer).

While we cannot divulge some of the specifics about the new system, we're able to report that—according to company sources—it is supposed to be easy to use, even for those not experienced with 3-D, while offering powerful features not readily available on a personal computer platform. The package is slated to include such high-end features as transparency; multiple light sources (with color); hier-



archical motion for objects, lights, and cameras; object monitoring; motion blur; and environment, texture, transparency, bump, and surface mapping.

Video images grabbed with Digi-View Gold or the Video Toaster can be mapped

ONE THING IS CERTAIN. . . AMIGA 3-D CONTINUES TO HEAT UP.

on any object, according to NewTek. The interface is mouse-controlled, with real-time wireframe perspective editing, allowing users to quickly compose 3-D animations with point-and-click operations. As of this writing, we have no specific product name or suggested retail price.

New 'Scripts' for Continued Success

A current 3-D rendering package due for upgrade—although perhaps a little later in the year—is **PageRender 3D** ($159.95). Bob Maludzinski, president of **Mindware International**, says, however, that version 2.0 and subsequent updates will continue to emphasize the product's lengthy list of script commands, and the use of mathematical functions within these scripts, to generate 3-D images.

Mindware also plans to extend PageRender's ARexx capabilities (present since the program's initial release), thus enhancing the ability of other programs to drive PageRender. According to Maludzinski, PageRender will be ideally positioned to make use of the increasingly widespread support of ARexx in the Amiga community in automating the production of a broad range of business graphics and videos. The firm plans to develop specific applications to serve this area.

Indeed, specific applications tailored to work with PageRender appear to be a big part of the Mindware strategy, according to Maludzinski. The firm plans to release so-called "automated #-D application programs" that would ease animation and video work, as well as target specialized scientific markets, such as chemical modeling.

Also on tap for version 2.0 are improvements to automate the program's ability to generate 3-D animated logos.

3-D Animation for The 'Journeyman'

A brand-new 3-D animation package is in the works from **Hash Enterprises**, developers of the popular Animation: series. The latest addition, **Animation:Journeyman**, promises a wide variety of animation features, including a 3-D "cubic-patch" modeler, a character designer, a motion creater, a "bird's-eye-view" choreographer, and a 24-bit high-resolution renderer.

Intriguingly named, cubic-patch modeling is billed by Hash as a "highly-interactive technique stressing 'organic' animation" designed to make character and movement more natural and lifelike. The company hopes that this modeling process will surpass the polygonal editing approach employed by many other animation packages.

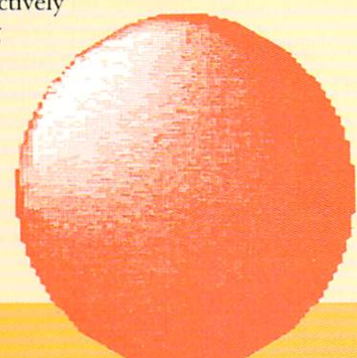
Other Journeyman features touted by Hash include surface decaling, multiple colored light sources, spline paths, wireframe rehearsals, and ANIM-format compatibility.

Animation:Journeyman supports both NTSC and PAL video standards. The program is scheduled for release later this summer at a price of $500, and it will require an Amiga 2500 or equivalent.

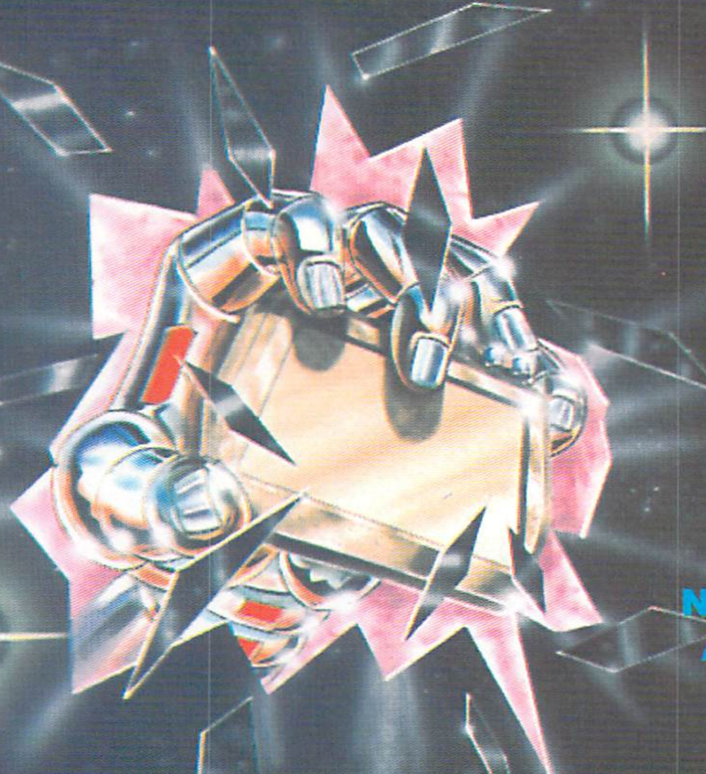
Animation Apprentice (currently selling for $295) will continue to be available, although it will soon be heavily discounted, according to Hash.

Rounding Out the Field

While a number of 3-D graphics developers are actively pursuing soon-to-be released new products or up- ►



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- Show frozen picture
- Play resident sample
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- Calculator
- Help Command
- Full search feature
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grades, several others are keeping their plans on the back burner.

Byte by Byte, developer of the highly visible and immensely popular **Sculpt** programs, is actually now developing more aggressively on the Macintosh than on the Amiga. But a spokesperson on the Sculpt technical support line told us not to worry, that the Mac versions of new Sculpt programs, when completed, will then be ported back to the Amiga—probably later this year or in early 1991. Existing packages (Sculpt-Animate 4D—latest versions 2.09 and 2.09c for 68020/030 models—$499.95; Sculpt-Animate 4D Jr., $149.95; and Sculpt 3D XL, $179.95), will, of course, continue to be available to Amiga users.

InnoVision Technology intends to upgrade **Video Effects 3D** (current version 1.2, $199.95) at some point later in the year, but no details have yet been announced. **Micro Magic** states it has no upgrade plans for **Forms in Flight II** (distributed by **Centaur Software**), but it will be dropping the price of the program from $119 to $59.95 by the time this issue is published. **Gold Disk**, marketers of **Design 3D** (current version 1.0, $99.95), also has no immediate upgrade plans for its 3-D program.

Some of the new products we have discussed here are currently available—or will be by the time this is published—so look for reviews soon in *AmigaWorld*. Others still in development may take a little longer than their connections intended. But one thing is certain: The world of Amiga 3-D continues to heat up, and its future is going to converge on its present at an even faster pace. ■

Manufacturers' Addresses

Aegis Development
a division of Oxxi Inc.

Byte by Byte
Arboretum Plaza II
9442 Capitol of Texas Hwy. N
Austin, TX 78759
512/343-4357

Centaur Software
4452 Redondo Beach Blvd.
Lawndale, CA 90260
213/542-2226

Gold Disk
PO Box 789, Streetsville
Mississauga, Ontario
Canada L5M 2C2
416/828-0913
800/387-8192

Hash Enterprises
2800 E. Evergreen
Vancouver, WA 98661
206/573-9427

Impulse Inc.
6870 Shingle Creek Pkwy., #112
Minneapolis, MN 55430
612/566-0221
800/328-0184

InnoVision Technology
1933 Davis St.
Suite 238
San Leandro, CA 94577
415/638-8432

Micro Magic
distributed by Centaur Software

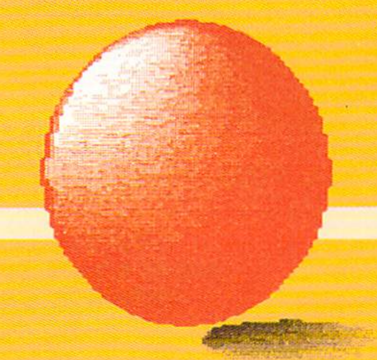
Mimetics Corp.
PO Box 1560
Cupertino, CA 95015
408/741-0117

Mindware International
110 Dunlop St. W.
Box 22158
Barrie, Ontario
Canada L4M 5R3
705/737-5998

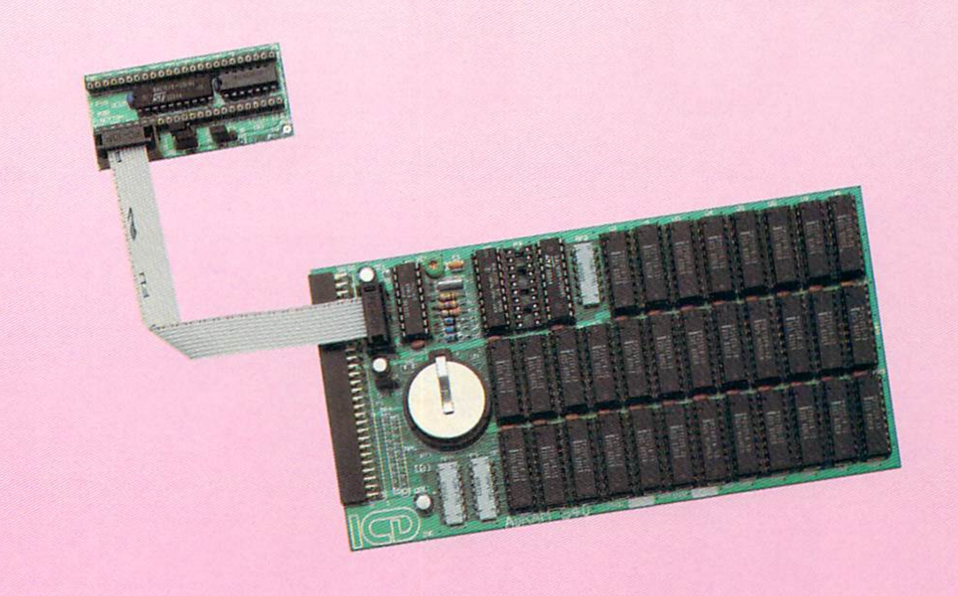
NewTek
115 W. Crane St.
Topeka, KS 66603
913/354-1146
800/843-8934

Oxxi Inc.
PO Box 90309
Long Beach, CA 90809-0309
213/427-1227

Progressive Peripherals & Software
464 Kalamath St.
Denver, CO 80204
303/825-4144



Don't settle for less!



AdRAM™ 540 packs the RAM where others fail. Now add up to 6 megabytes of RAM and a clock to your Amiga 500 computer interally! AdRAM 540 plugs into the A501 expansion connector and the 48 pin socket of the Gary IC.

Its clean design does not interfere with the computer's metal RFI shield. This easy no-solder installation provides 4 megabytes of expansion RAM when fully populated. Add the optional AdRAM 560D daughterboard for an additional 2 megabytes

If your Amiga 500 is equipped with the Super Agnus, a few modifications will allow AdRAM 540 to provide an additional 512K bytes of CHIP RAM. That's a total of 6.5 megabytes for an Amiga 500 without using the external expansion bus! 2.5 megabytes (2.3 without the modification) of this memory is automatically recognized by the operating system. A small program tells the OS where to find the rest, making all the RAM 100% Amiga software compatible.

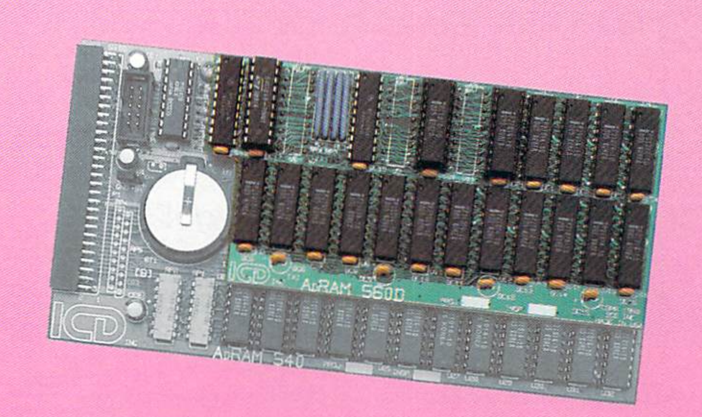
AdRAM 540 with a large RAM array lets you run larger and more sophisticated programs, allows you to take full advantage of your Amiga's multi-tasking operating system, and is very useful for large, very fast, RAM disks.

AdRAM 540's battery backed-up clock always keeps the correct time and date, even when the computer is turned off. The socketed clock battery is easily replaced at the end of its 3–5 year life.

AdRAM 540 uses high quality sockets and is available with or without RAM chips for easy upgrading and trouble–shooting. AdRAM 540 uses CMOS 256K by 4 DRAMs that are at least 120ns or faster. These can be added in groups of four (512K increments).

AdRAM 540 fully supports all Kickstart™ versions 1.2 and greater and easily installs into all revisions of the A500. A detailed manual and full diagnostic software are included for trouble–free installation and testing.

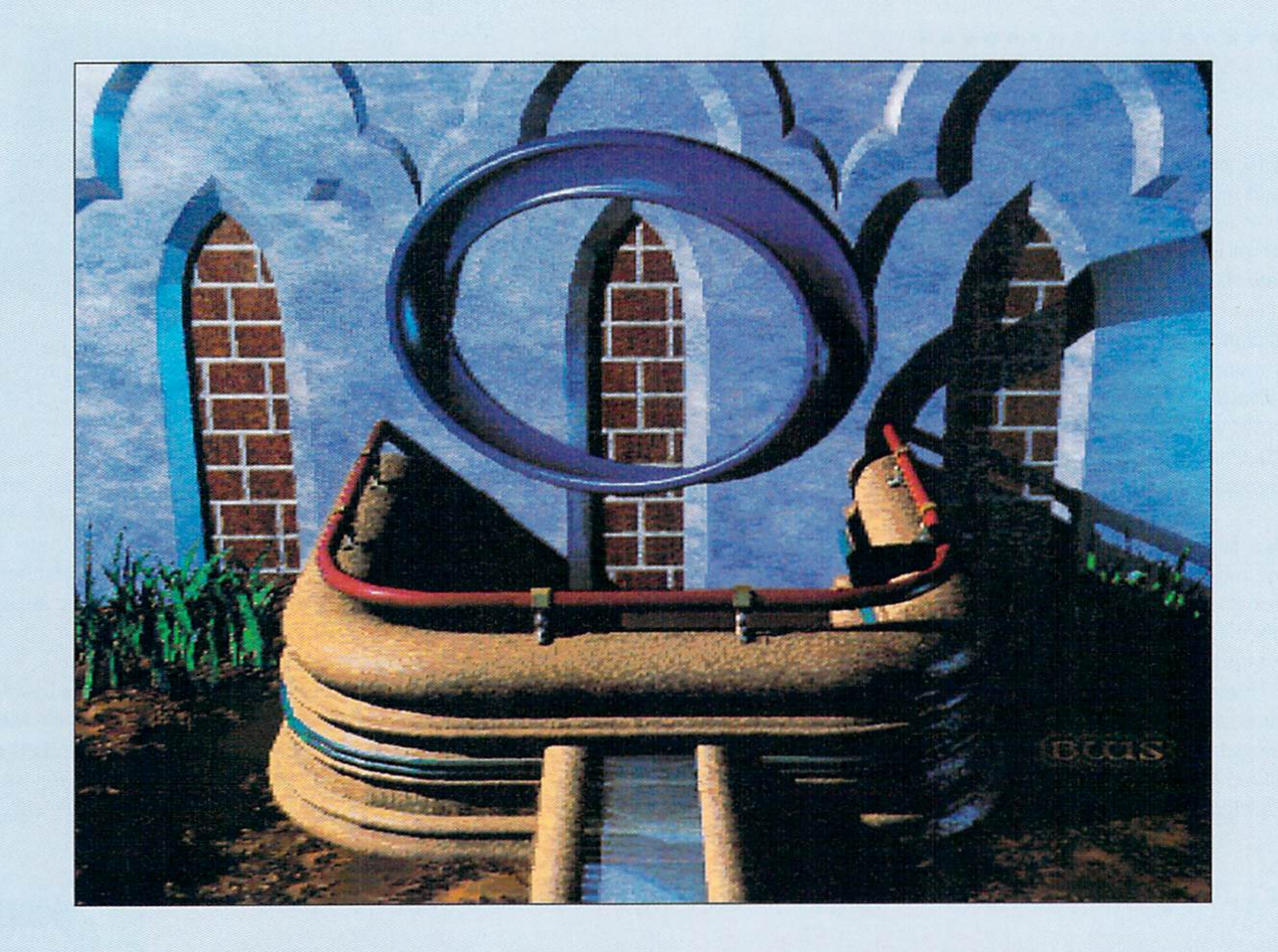
AdRAM 560D is a fully populated 2 megabyte daughterboard that plugs into the top of an AdRAM 540 with at least four RAM chips. AdRAM 560D increases the maximum capacity of an AdRAM 540 to 6 megabytes.





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"OBJECT



MASTER TURBO SILVER'S OBJECT EDITOR

IN THREE MOVES

By Bradley W. Schenck

LESSONS"

NO 3-D MODELING and animation software can currently top Turbo Silver SV's (Impulse, $299.95) control over an object's appearance, but neither does any program match its frustratingly steep and unforgiving learning curve. Becoming proficient with the Object Editor is unfortunately a matter of discovering how the designers *meant* you to do things. Once you've managed that, the program is consistent.

To demonstrate the program's power and help you get on its programmer's wavelength, we are going to construct an object that can be very difficult with other 3-D programs: a Möbius strip—that loop with a twist that seems to defy nature by having only one "side." You can start tracing your finger along the outside, find yourself running your finger around the inside without quite knowing how, and finish on the outside again where you began. In grade school art classes, making one was as simple as cutting a strip of construction paper, twisting it, and pasting the ends together. Recreating this shape in Turbo Silver takes three slightly more involved steps, but using the Mold-by-Story function makes them very easy. Some of the concepts the project demonstrates apply to the Animation-by-Story function as well, so understanding how this tutorial works will help you with more advanced problems later on. (Turbo Silver 3.0 will also perform everything discussed, but has different names for a few menu commands.)

1. Draw the Extrusion Path

As a Möbius strip is usually a twisted, oval-shaped loop, your first task is to make the oval you will use to mold the object. Create a new Project from the main animation screen, open a cell, and double click on the cell to enter the Object Editor, your main work space. From the Edit menu, select Add/Custom to call up the Shapes requester. Select Disk, choose 200 units for the two size values, and pick 90 divisions, which will make a very round oval. (If you run low on memory later, repeat the steps, using fewer divisions both here and when molding the final object.)

Because you want a circle, not a filled disk, you must eliminate all the interior edges, an inconvenient but necessary process. The simplest way is to delete all the edges in the object; the faces will be deleted with them. Later, you will rebuild only those needed. You can skip this step in future projects by creating your own primitives, such as circles, cones, and other shapes you plan to use frequently.

You are currently in the Front View and need to turn the disk face up. Click on the disk to select it; then choose Transformation from the Settings menu. This powerful requester lets you scale, rotate, or move objects in many ways. In the lower left is the Rotations section: Click in the Rotate X box and type 90 to turn the disk. Close the requester, and the disk rotates.

From the Pick menu, select Edge. Press RIGHT-AMIGA-A to specify all edges, then RIGHT-AMIGA-D to delete them. Zoom in on the circle twice, and scroll the view until you can easily click on different points. From the Edit menu, select Add/Edge. Click on one point, then scroll around the circle and click on each point, in order, until you close the circle at the first point you clicked. Do not skip any points, and fill the edges in later. Extruding or animating along paths makes an object follow the path *in the order in which the edges were created*. If you fill in a few edges here and there, and then connect them later, you will create a path that skips around the circle instead of following it.

Select Object from the Pick menu, and zoom back out. The circle, now hollow, should look very round. To squash it into an oval, again select Transformation from the Settings menu. The Transformations requester allows you to modify an object in any combination of World Axes or Object Axes. When you move and rotate an object, its own X, Y, and Z axes will be aligned separately from the World axes. Move-

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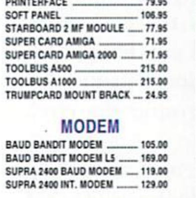
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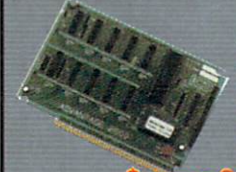
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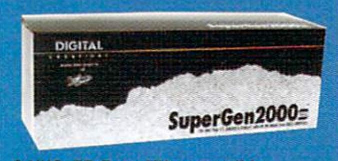
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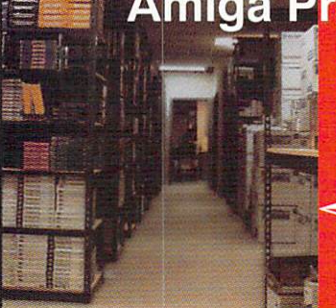
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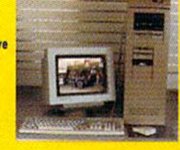
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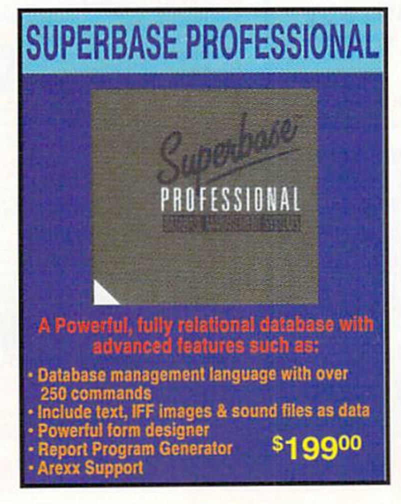
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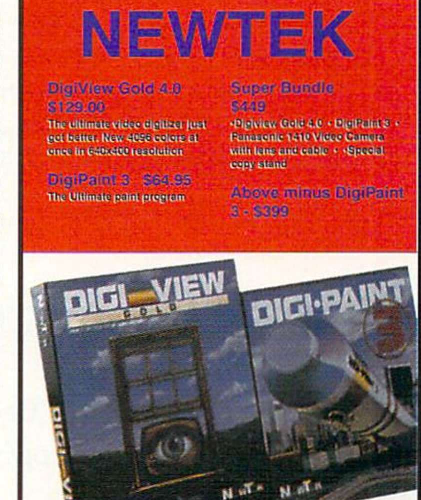
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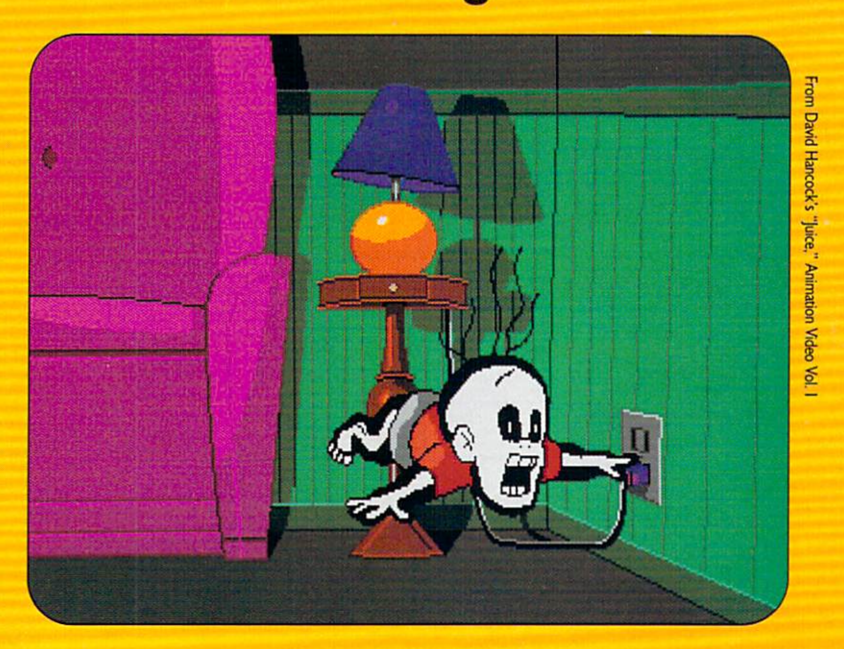
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"Kettle" created by Hrant Papazian with Sculpt-Animate 4D.

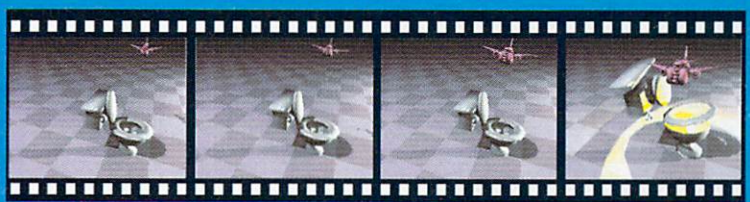


Render...

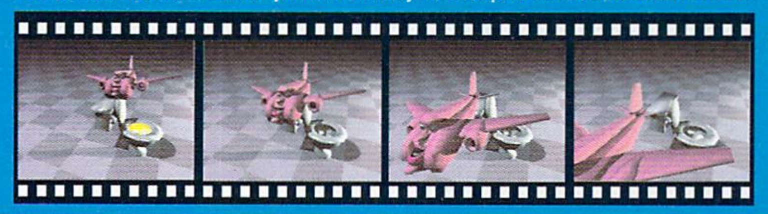
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from p. 31

ment around Local or Object axes gives different results than movement around World axes, which comes in handy later. This time, scale the object in the World Z direction. Click in the Scale Z box, enter .7 to squash the circle's height to 70%, and check the results. If you want to try again, press RIGHT-AMIGA-U to undo the transformation. Remember

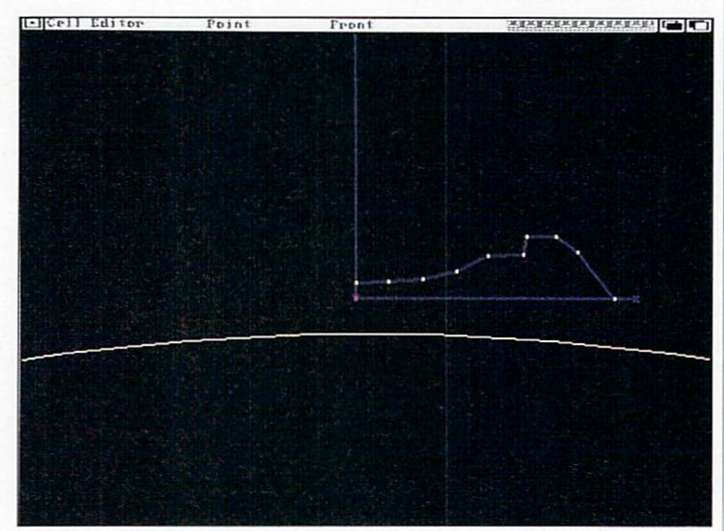


Figure 1. This Object Editor screen shows one-quarter of the Möbius strip's cross section. Below the object is a small piece of the oval path that the cross section will follow when extruded.

that this is the shape your Möbius strip will follow as it's seen in profile. When you are satisfied, close the requester.

Before continuing, you need to give the path a unique name. With the oval selected, pick Attributes from the Settings menu. The Attributes requester controls an object's color, transparency, refraction, roughness, reflectivity, and other properties. For the moment, you are interested only in the top text box, where the object name appears. Clear this box and type in Path. The name does not matter; you could just as easily call it Fred.

2. Design the Object's Cross Section

The next step is to create an object representing a cross section of the Möbius strip—the object you will extrude along the oval path. Because it is destined to twist and reconnect with itself, it *must* be symmetrical. Explaining the concepts is much more complicated than performing the process, so read through the directions carefully so you begin to get a feel for how you will use the Object Editor to create a perfectly symmetrical, hollow object.

Start by highlighting Add/Axis in the Edit menu. Press F1 to select the object; it will turn blue. Press F1 again (the object turns green) and click at some convenient location on the oval path. The axis will move to that spot. Zoom in on it about three times, scrolling the view to keep the new axis centered.

You will create one-quarter of the cross section first. For convenience, work on the upper-right fourth of the object, using the axis as a reference. The object should still be blue (selected). Pick Add/Line from the Edit menu. (Version 3.0 users, pick Add/Point. You will have to connect the points later.) Start by placing a point on the vertical (Z) axis. Continue placing points in an interesting shape, ending on the horizontal (X) axis as in Figure 1. You do not have to make your Möbius strip flat, but try not to use too many points. You are going to duplicate this section several times, and if you get carried away, the object may become too complicated to render within your RAM limitations. The example shown in Figure 1 is about as complex as you should get. If you have less than two megabytes of RAM, keep it even simpler. If the shape seems uneven, enter Pick Point mode and move the points until you're happy with the ►

Turbo Troubleshooting

There's an ugly mark on part of the strip.

One cause might be that your original object was not completely symmetrical. When it rotated and rejoined itself, the sides or the top and bottom did not match, leaving a scar on the object. Try remaking the cross section or modifying it. Turbo Silver SV's Grid Snap function can help.

If a line mars the join (especially on the "outer" face), your cross section was so deep that the strip "cracked" on the outer surface where it rejoined. To seal it up, try extruding along a path with more points (a rounder path will make a smoother joint), or try adding a slight Local X rotation to the Story.

The strip looks strange and has flat areas.

You forgot to select Y Align in the Story requester.

Parts of the strip are missing or appear distorted.

Your object is too complex for Silver. Try again with a simpler cross section, fewer divisions in the extrusion, or both.

You can't render the object.

Buy more RAM. Do it anyway; you'll thank me someday. Until you expand, use fewer divisions during the extrusion, simplify the cross section, or do both.

You don't understand a word I said.

Write to me at *AmigaWorld*, or contact me on PeopleLink (my ID is –BWS–). If you live in Southern California, check out the newly-formed Turbo Silver Users' Group. Users outside the area take heart: The group will be publishing a newsletter. For more information, contact Victor Osaka, 1341 Ocean Ave. #349, Santa Monica, CA 90401. □

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shape. (If you're using 3.0, pick Add Edge from the Edit menu and connect the points with edges now.)

Once you like the shape, return to Pick Object mode. Press RIGHT-AMIGA-C to copy the object. Now you have a duplicate ready to paste into position. Bring up the Transformations requester again, and flip the section vertically by rotating it 180 degrees on the World X axis.

As you know by now, objects in Silver are selected,

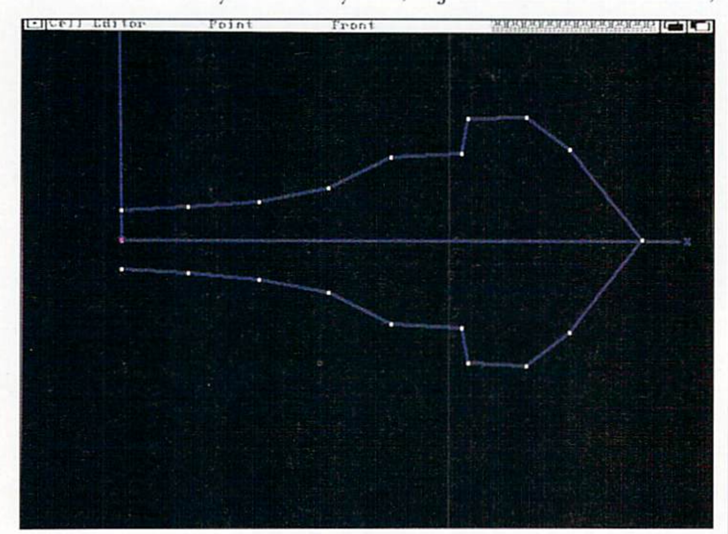


Figure 2. By pasting together two copies of the object shown in Figure 1, you can create half of the Möbius strip's cross section.

moved, and modified with their axes. If you were to paste in your copy of the object now, its axis would occupy the same point of space as that of the rotated original. You could use RIGHT-AMIGA-N and RIGHT-AMIGA-B (Next and Back) to cycle through the objects in the scene, but better first get the axis out of the way, instead. To do so, enter Pick Face mode, press RIGHT-AMIGA-M (Mark), and then click on a spot at which to place the axis (location does not matter). (This simple trick can be very powerful when using Silver's textures; in addition, moving an object's axis can have a dramatic effect on how the object moves when rotated.)

Return to Pick Object mode, and press RIGHT-AMIGA-P to paste in a copy of the original object. Note that the object axis is still in its original location. Click on the pasted section (turning it blue), then hold down the Shift key and click on the rotated object (below it) so that it, too, turns blue. Next, press RIGHT-AMIGA-J to join the two objects. Be sure that you selected the upper one first, so that the new object's axis is in the middle, where it started. If you selected them in the wrong order, undo (RIGHT-AMIGA-U) your work and try again. Your screen should look similar to Figure 2.

Because the new object was created from two copies, it has a pair of duplicate points—the two copies of the last point you created, on the right side. They occupy exactly the same location in space, so to save memory later, you should join these points now. Use the same method as you did for the copies of the object. Enter Pick Point mode and zoom in very close. Click on the right-most point twice, turning it green, and click off to the side to move one copy of the point out of your way. You should see the other copy still in place. Click on that point, then shift-click on the one you moved, and press RIGHT-AMIGA-J to join them.

Time for the second half. Zoom back out and select Pick Object from the Pick menu. Press RIGHT-AMIGA-C to copy this new object, then rotate it 180 degrees on the World Z axis in the Transformations requester. Enter Pick Face mode, press RIGHT-AMIGA-M, and click off to the side to move the object axis as before. Press RIGHT-AMIGA-P to paste the original object back, click on it, and shift-click the rotated copy. Press RIGHT-AMIGA-J to join these two copies.

This time, the top and bottom middle points are both doubled. Again, enter Pick Point mode and zoom in to where those two points are visible. Select the top point and move it to the side. Click on its unmoved copy, shift-click the moved point, and press RIGHT-AMIGA-J to join them. Make sure that this point is right on the line of the Z axis. Repeat the process on the lower point.

The worst is over: Return to Pick Object mode, select Attributes from the Settings menu, and choose the color you want the object to be. You could also select its roughness, if you want it to be rough, its specularity and hardness values, and so on. *Save this object to disk.* If anything goes wrong, you can just reload it to try again.

3. Extrude the Cross Section

Now select Settings/Story. The Story requester allows you to define what happens while an object is extruded in the Object Editor or animated across a series of cells in the Animation Editor. At the top of the requester, you can name a path for the object to follow. Type in the name you gave the oval (Path, Fred, or whatever). Here's the critical part: You want this cross section to follow the oval path, aligning with the path as it curves, and to twist in the process. First, click in the Y Align box to force the object's Y axis to line up with the direction of the path as the object is extruded. Next, click in the Y Rotation box and enter 180, making sure that you also select Local beneath it. This will make the object rotate 180 de- ►

Manufacturer's Address

Impulse Inc.
6870 Shingle Creek Pkwy. #12
Minneapolis, MN 55430
612/566-0221
800/328-0184

grees on its own Y axis as it follows the path, providing the twist. Now you can see why you had to be certain that the object was perfectly symmetrical: What was the right side of it will rotate around and link with what was the left. If the object were lopsided, it would not join smoothly. Figure 3 shows what the Story requester should look like at this point.

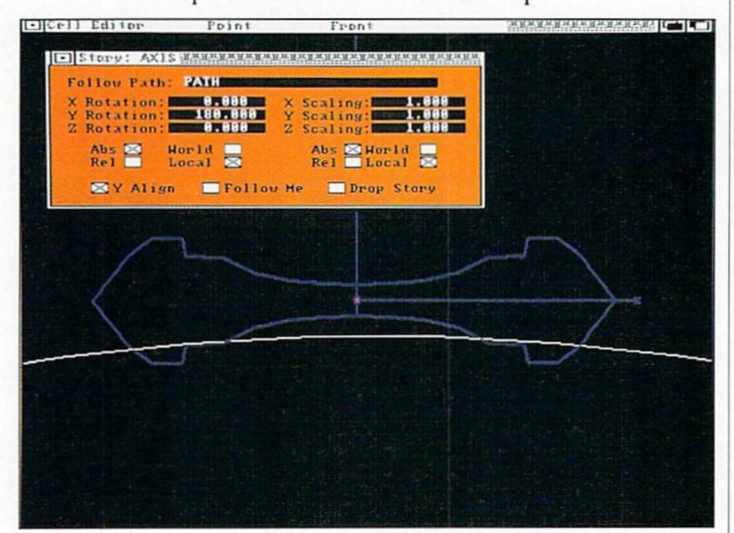


Figure 3. The Story requester controls what the object will do during its extrusion along the oval path. With the entire cross section complete, the Story parameters are set for the object to twist 180 degrees as it follows the extrusion path, aligning its own Y axis with the direction of the path.

The final step is to select Mold from the Settings menu and click in the By Story box. At Number of Sections, choose the number of divisions you want to use for the extrusion. The higher the number, the more complex the object will be; the more complex it is, the rounder and smoother it will appear, but the more memory its generation will consume. If the number is very high, Silver may have trouble creating the object. (The program is limited to 9999 points per object, and points add up faster than you expect.) For a fairly smooth object, try 40 divisions, unless you are already worried about memory. Click in the requester's close box and wait a few moments for the Möbius strip to appear. Add a light or two to the scene and do a Solid Modeled rendering to see how it turned out.

If something looks wrong, consult the sidebar "Turbo Troubleshooting" for hints and fixes. Otherwise, let your imagination loose and modify this very complicated and impressive object with texture wraps, image wraps, or any of the other tools in Silver's rendering arsenal. You could even try modeling a finger to trace around it. ■

Bradley Schenck is a freelance graphic artist who has won the Badge Killer Demo Contest twice in a row. His 1989 winning entry, The Sentinel, was created in Turbo Silver. Write to Brad c/o AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

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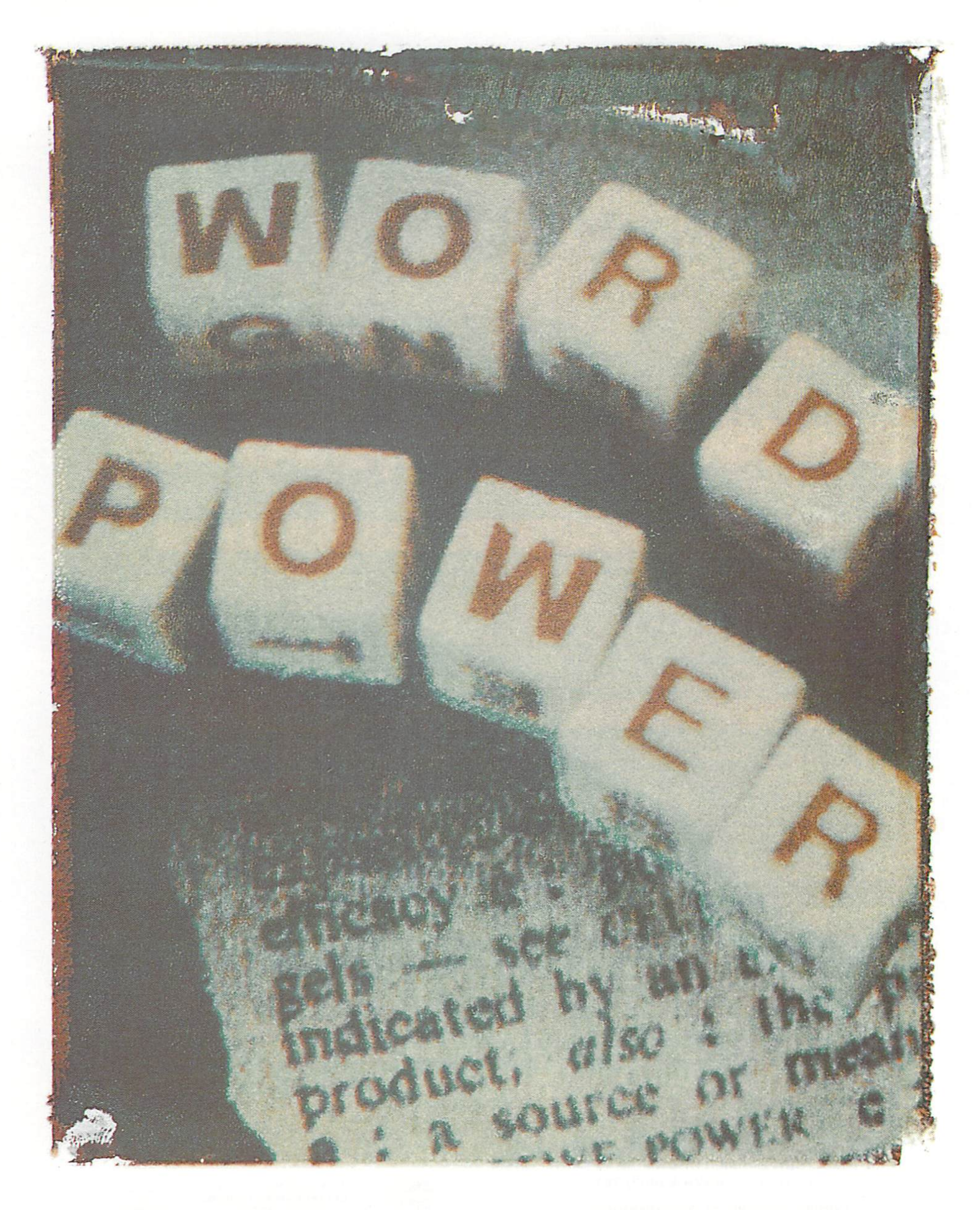
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A COMPARATIVE SURVEY OF 12 AMIGA WORD PROCESSORS

To help you add punch to your prose and avoid punching your monitor, we torture-tested this disparate dozen to find "the best."



By Nancy Dryden Lorieau

YOU WOULDN'T BUY a car without taking it for a spin, and you shouldn't buy a word processor without taking it for a type. To save you the time and trouble, I typed, edited, and retyped documents in a dozen word processors on both a one-megabyte A500 and an A2500 with three megs. For a feature-by-feature comparison of what each has to offer, see the accompanying chart. For a more subjective view and advice on which program is best for your job, refer to the capsule descriptions below.

EXCELLENCE!

If your needs are broad and you want a text-and-graphics word processor that will meet all of them, excellence! remains a good buy. It's copy-true and suitable for all but the youngest user. For language students, French and German versions of the program are available, and everyone will benefit from the recently added access to Workbench 1.3 printer drivers. On a powerful machine, this is a powerful program. On a one-meg machine, however, editing response is sluggish. Don't even consider running excellence! with less than one meg of memory.

KINDWORDS

An intuitive text-and-graphics word processor, KindWords 2.0 is an outstanding choice for students. It is extremely easy to use, and the thesaurus provides not only synonyms, but also precise definitions of the chosen words.

SCRIBBLE! PLATINUM

A text-based classic, Scribble! Platinum has many reliable features. At the top of the list are its spelling checker and thesaurus, both of which use the 103,792-word Proximity/Merriam Webster Linguibase, with scientific and technical supplements. Unfortunately, Scribble! does not provide a copy-true display, forcing you to rely on "dot" or character commands for some functions. For example, although the program lets you incorporate graphics into documents, you must use dot commands to do so, and the graphics are not displayed. Producing a satisfactory printout requires experimentation. I don't recommend Scribble! for children, but if you need a scientific or technical dictionary, the program is a good choice.

TEXTCRAFT PLUS

While quite slow and primitive by today's standards, Textcraft Plus has a feature found in no other program: ready-to-use templates for different document styles. There are templates for three types of resumes, two bibliography formats, business letters, term papers, and more. Also, the animated tutorials demonstrating almost every aspect of the program's operation are very helpful to beginners. You can find Textcraft Plus heavily discounted at many large software outlets. At $40 or less, the document templates alone make this a good buy.

PEN PAL

More than just a word processor, Pen Pal comes with a nonrelational database, a border tool, rudimentary drawing tools, and a custom forms manager. Its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically flow text around graphics. You will need at least one megabyte of memory to harness this power, however, and you ►

should apportion it carefully. Pen Pal's system of initially allocating memory from the program's Preferences menu takes a bit of getting used to. Even when your machine has lots of memory, you can run out of it if you make an incorrect setting.



Graphics-handling is Pen Pal's specialty.

An inviting user interface and extremely intuitive controls make Pen Pal fun to use, while the multitude of features render it more than sufficient for most word-processing needs. If you need graphics in your documents, check it out.

PROTEXT

While Protext does offer pull-down menus and keyboard shortcuts for some common operations, it betrays its MS-DOS heritage by requiring you to type commands in its Command mode to access most of the many features. Protext is available for several machines, and the Amiga version lets you load files from other formats. There's power here, if you are willing to endure the time and trouble involved in learning the program's language. If you need an intuitive display and controls, however, look elsewhere.

TEXTPRO AND BECKERTEXT

Imported from Germany, TextPro and its more powerful relation, BeckerText, constitute Abacus Software's attempt to crash the text-and-graphics word-processor party. They should be turned away at the gate. Both programs are afflicted with copy protection that limits use to only one machine. Both boot directly into the program and prohibit access to Workbench, provide only rudimentary graphics-handling ability, have problems combining graphics and fonts, will not produce color output, and will not support Amiga bitmapped fonts. Laptop owners, however, take note: Both will accept data through the RS-232 serial port. TextPro has no dictionary or thesaurus and is the only program reviewed that will not perform mail-merge. BeckerText has many powerful features, but also most of the faults that plague its sister program. I do not recommended these for general use. ►



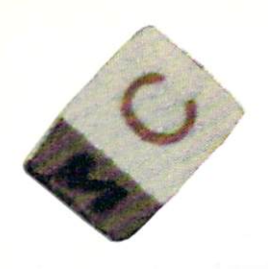
PROGRAM TITLE	BeckerText	excellence! 1.3	KindWords 2.0
MANUFACTURER	Abacus	Micro-Systems	The Disc Co.
PRICE	$150	$299	$99.95
MEMORY FOR FULL OPERATION	512K	1MB	512K
USER INTERFACE			
Intuitive?	****	*****	*****
Copy-true display?	****	*****	*****
On-line help?	No	Yes	Yes
Ruler?	Yes	Yes	Yes
TEXT FORMATTING/MANIPULATION			
Headers/footers?	Yes	Yes	Yes
Automatic footnotes?	No	Yes	No
Automatic endnotes?	No	No	No
Table of contents?	Yes	Yes	No
Indexes?	Yes	Yes	No
Multiple columns?	Yes	Yes	No
Mail-merge?	Yes	Yes	Yes
Auto-hyphenation?	Yes	Yes	Yes
Import/export ASCII?	Yes	Yes	Yes
MULTITASKING			
Multiple documents?	Yes	Yes	No
Program runs in window?	Yes	Yes	Yes
ARexx support?	No	No	No
GRAPHICS SUPPORT			
Import graphics?	Yes	Yes	Yes
Move graphics?	Yes	Yes	Yes
Resize graphics?	No	Yes	Yes
Wrap text around graphics?	Yes	Yes	No
Text flow around graphics?	No	No	No
Support Hi-Res?	No	Yes	No
Drawing tools?	No	No	No
Borders?	No	No	No
Graphics plus printer font?	Yes	No	Yes
Color Printing?	No	Yes	Yes
FONTS			
Support Amiga fonts?	No	Yes	No
Support Amiga keymap?	Yes	Yes	Yes
Include custom fonts?	No	Yes	Yes
Support printer fonts?	Yes	Yes	Yes
Support ColorFonts?	No	Yes	No
PRINTERS			
Embedded codes?	Yes	No	No
Preferences?	No	Yes	Yes
Custom?	Yes	No	Yes
PostScript?	No	Yes	No
TEXT RELATED			
Spelling checker?	Yes	Yes	Yes
Add words to spelling checker?	Yes	Yes	Yes
Thesaurus?	No	Yes	Yes
Word count?	No	Yes	No
Grammar checker?	No	Yes	No
Readability scale?	No	Yes	No
Outliner?	No	No	No
Foreign languages?	No	2	9
OTHER			
User-defined macros?	Yes	Yes	No
Math functions?	Yes	Yes	No

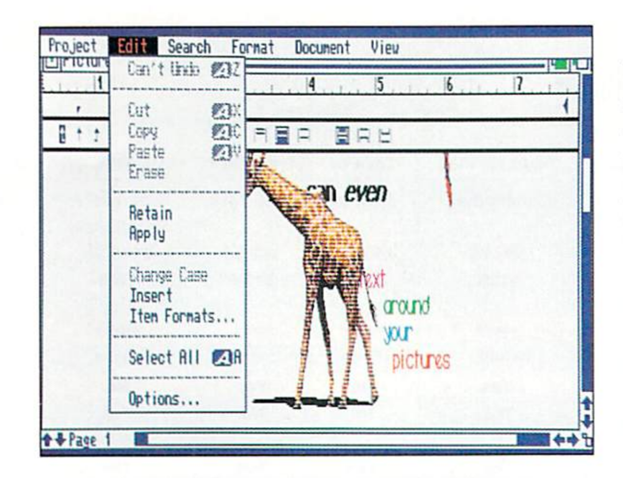
NOTES: The rating scale for Intuitive controls and Copy-true (what-you-see-is-what-you-get) display

FEATURES AND FUNCTIONS

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1MB	512K	1MB	512K	512K	512K	512K	1MB	1MB
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No	Yes	No	No	No	No	No	No	Yes
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Yes	N/A	Yes	No	N/A	Yes	N/A	No	N/A
Yes	N/A	No	No	N/A	No	N/A	No	N/A
Yes	N/A	Yes	Yes	No	No	N/A	Yes	N/A
Yes	N/A	No	No	N/A	No	N/A	No	N/A
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No	12	1	No	No	No	No	No	16
No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
No	No	No	No	No	No	No	No	Yes

is from one (low) to five (high) stars. Items marked with an asterisk are explained more fully in the text. The abbreviation N/A means Not Applicable.





ProWrite will let you combine multiple fonts of multiple colors in the same document.

With Transcript, you can remove all unnecessary carriage returns with a single command.

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PROWRITE

The latest in a string of upgrades, ProWrite 3.0 is not quite a text-handling powerhouse, but it comes close. New Horizons introduces a new font concept with this update, while retaining the program's capacity to use both printer and Amiga bitmapped fonts. The printing menu is now highly flexible and includes the ability to print up to five columns per page. Also new to version 3.0 are a faster spelling checker, a thesaurus, a word counter, a readability scale, a more comprehensive manual, and ARexx compatibility. As bonuses, New Horizons offers ProScript ($49.95), which provides PostScript support, and Flow ($99.95), a companion program that helps you outline your thoughts. ProWrite is also published in Swedish.

While full of options, the program is memory-efficient and multitasks well. If you are looking for a very good word processor with near-desktop-publishing capabilities, ProWrite may be a good choice for you.

TRANSCRIPT

Although Transcript offers menus for common operations, many of its functions require keyboard commands and embedded codes. It will not accept graphics, and although its display is clear, it is not copy-true. Transcript will work as a partner to Professional Page (Gold Disk), however, and has several dedicated features. It's fast, well-constructed, and actively supported by Gold Disk. For straightforward jobs, Transcript's editing speed and low price make it an unsurpassed deal. If you plan on elaborate page formatting and want point-and-click convenience, however, save up for something else.

VIZAWRITE DESKTOP

Although Vizawrite seems to aspire to desktop-publishing status, it is only a text-and-graphics word processor of low-to-moderate power. Its real forte is printing. Its biggest plus is the ability to generate custom printer drivers and to use variable spacing in bitmapped fonts. If your printer is not supported by Preferences and you need specialized printer-handling, Vizawrite might be worth a second look.

WORDPERFECT

In terms of text-handling abilities, WordPerfect is the most powerful and feature-laden word processor available for the Amiga. A recent upgrade not only enhances the program's already considerable speed, but also adds an Amiga-style file requester and the capacity to import files generated by its IBM cousin, a near-standard in its own market. I highly recommend this program. ■

Nancy Dryden Lorieau is an education consultant and freelance writer who specializes in applications software and telecommunications. Write to her c/o AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*



Illusions of Depth

#17

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

2-D or not 2-D: that is the question:
Whether 'tis nobler in RAM to suffer
The ray-trace computation time,
Or take a paint package,
And by a brush-wrap end it?

CONTINUING OUR EXPLORATION of relatively simple 2-D techniques to achieve 3-D effects, we find ourselves moving from HAM to Hamlet, so to speak. Part of the 2-D "claymation" process presented last month involved a HAM method in Digi-Paint (NewTek) for creating a 3-D look using transparency settings. This month, we will explore some tricks with DeluxePaint (Electronic Arts) that quickly achieve a 3-D look by using a combination of freehand technique and fill functions. The method outlined can also be used in Digi-Paint, Photon Paint (MicroIllusions), and Deluxe PhotoLab (Electronic Arts).

Don't misconstrue the little Shakespearian preamble above: None of the 2-D paint-program techniques discussed in *Accent* are meant as occasions for bashing ray tracing. Good ray-traced images done with programs like Turbo Silver (Impulse) and Sculpt-Animate 4D (Byte by Byte) are beautiful. The illusion of the third dimension can be stunning, complete with complex shadows, reflections, and highlights. For projects with pressing deadlines, however, tying up your Amiga for hours may be unacceptable. That's why these time-saving 2-D approaches are so appealing.

In a series of molecule animations I did recently, I wanted to show highlight, shading, cast shadow, and reflection. Using the contoured gradient fill in DeluxePaint's Fill requester gives a nice illusion of dimension, but the light always appears to be coming from a direct horizontal or vertical source. An artist would seldom elect to render a solid in such a simplistic manner. Here, then, are some alternatives.

A Well-Rounded Approach

We'll stick to spheres as examples and work our way up to the technique employed in the accompanying illustration. First, let's explore some basics about drawing solid shapes. To give a three-dimensional look to an object, it is effective to highlight one side and shade the opposite side. This implies an imaginary light source falling on the object. For your first experiments, highlight the upper left and shade the lower right. Any cast shadows should then stretch off to the right of the object.

A simple way to make it look as though light is falling on a sphere from that angle is to do a contoured gradient-filled circle, pick it up as a brush, and select Rotate from the Brush menu to rotate it about 45 degrees. (Set Be Square from the Prefs menu to compensate for screen distortion before drawing circles.) You will notice, however, that although the circle rotated, it has become an ellipse. To fix this, return to the Rotate submenu and select Shear. By moving the mouse, you can push the shape back into a pretty good circle.

The edge of the sphere may be a bit ragged as a result of these operations. One easy cleanup is to use Size to create a round brush just slightly smaller than the sphere. Make final size adjustments with the "+" and "−" keys. Stamp it on the spare screen and select that brush color as background color with the right button. Use the brush cutout tool to pick up a rectangle including that circle. Because the background color is transparent, you have picked up a rectangle with a hole in it. Go back to the original

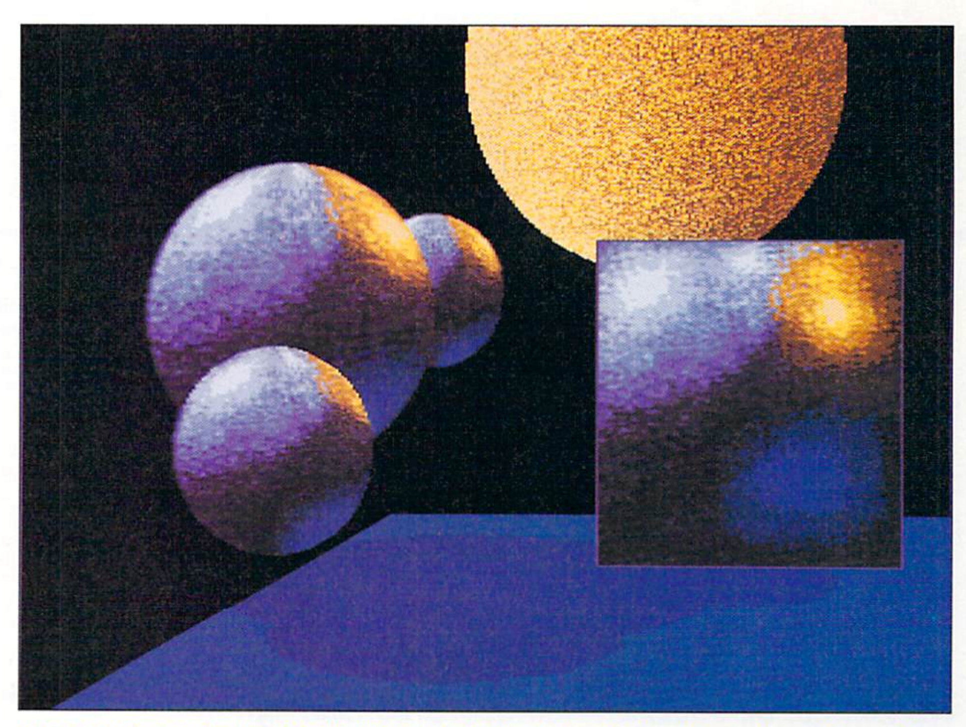
Add a new dimension to your repertoire with 2-D paint tips that yield a 3-D look.

screen with this "cookie cutter" and stamp it carefully over the sphere, trimming it to a clean circle.

Remember that effective gradient fills rely on setting up ranges in the Palette requester. A spread of colors from light to dark values is desirable, giving the feeling of modeling, light, and dimension. The Dither control in the Fill requester adjusts the intermixing of color pixels across the filled area.

From Circles to Spheres

The Fill requester contains powerful tools for effecting a 3-D look, so make use of them. First, rotate a horizontal, gradient-filled rectangle 45 degrees. Stamp it down and pick up a rectangular brush from within its boundaries so that the upper-left corner includes the lightest color and the lower-right the darkest. Select Wrap from the Fill requester and draw a filled circle on the screen. The brush will be distorted to the shape you draw, giving an effective illusion of depth. This works for any of the filled-shape tools.



Using the Wrap setting for DPaint's filled-circle tool, and then the inset brush, the artist created spheres with a 3-D look (above). The yellow sphere is a standard gradient fill for comparison.

Take this idea a step further and hand paint a rectangular brush. The inset in the illustration shows the idea. I used the airbrush in Shade mode for much of the work. My palette includes ranges of yellows, blues, and purples. Thinking ahead to the objects I wanted in this illustration, I painted their areas of reflected color in the rectangle. I planned these to correspond to the rough location of the blue surface and the yellow, gradient-filled circle. I lightened the upper left to suggest a light source.

For this example, my "molecule" has atoms of the same color. I did this to demonstrate a trick that gives a more organic feel to multiple spheres. I cut each sphere's brush in a slightly different fashion from the same rectangle so that each would result in a different wrap. For example, the brush for the nearest sphere includes less of the yellow area to make it appear closer to the viewer. You could cut radically different brushes from this one rectangle, speeding the production time of different spheres. On another painting, I created a textured rectangle for making shaded stones. Cutting each one a little differently, I used the filled-freehand shape to make in minutes a field of irregular, shaded stones that would have taken hours to render one at a time.

Another effective element giving the illusion of lighting and depth is the cast shadow. Make an object on a blank, spare screen. If it is to rest on or float above a surface, pick, with the left button, a darker value of the surface color to use as a foreground color. Pick up the object as a brush and press F2 for the Color mode. The object will now be a "shadow" in the foreground color. Pressing SHIFT-Z will allow you to stretch the shadow out horizontally and compress it vertically as shown. Assemble the elements at the last stage, adjusting orientations to best match highlights on the brush-wrapped objects. The Smooth tool can be used to soften the image and anti-alias jagged lines. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

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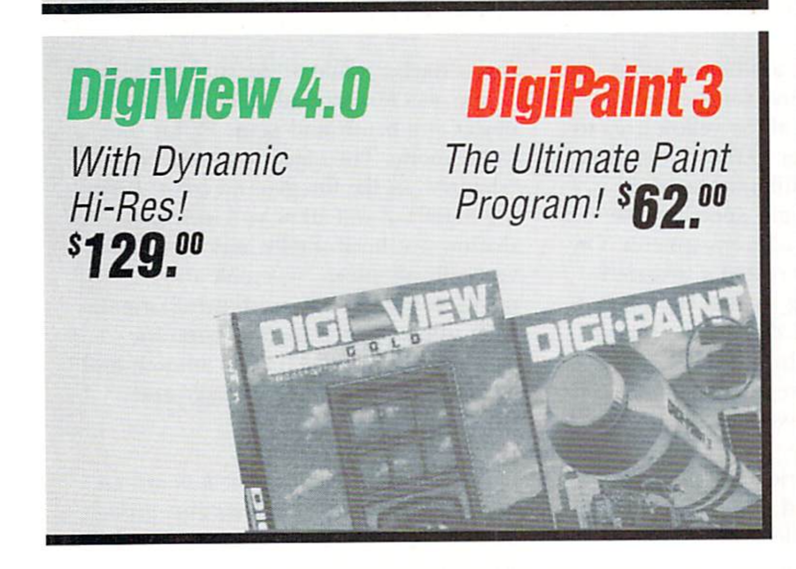
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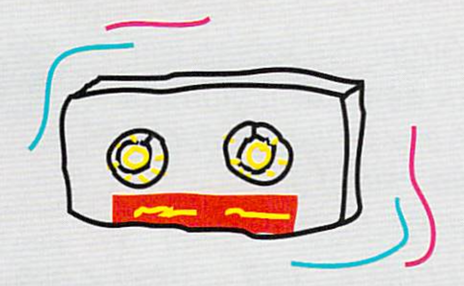




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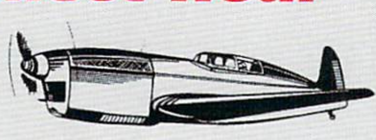
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Back to Basics Part 6

Now that your Shell is up and running, here are some command-editing tips that save time and keystrokes.

By Mark L. Van Name and Bill Catchings

LAST MONTH WE explained how to use the Shell's history buffer to recall and re-enter commands. Now we'll proceed to edit the commands you recall. You'll find these shortcuts helpful when performing a long string of similar commands, such as copying a series of files.

Changing the Lineup

To edit a command, simply recall it, and either delete or add characters as desired. Suppose, for example, that you had entered the command

LIST C

to see the contents of the C directory. If you now want to list the contents of the current directory, instead of retyping

LIST

simply press the Cursor-Up (↑) key to bring back the previous command, and then press the Backspace key to delete the character C. To see the contents of the C directory again, press Cursor Up and type C. (The cursor will always be one space past the last character on the line, so you can type in the additional character directly.) In these examples, you save only a few keystrokes, but as the commands get longer, the savings grow.

By learning to move the cursor efficiently, you can change characters that are in the beginning or middle of the command line. To move the cursor to the left or right one character at a time, use the Left (←) or Right (→) Cursor keys. (Note: You cannot move past the line's beginning or end.) To jump to the beginning of the line, press SHIFT-Cursor-Left or CTRL-A. To jump to the end, press SHIFT-Cursor-Right or CTRL-Z.

CTRL-W moves you to a predefined tab stop to the right of the cursor. Starting from the beginning of the line, issuing the command repeatedly moves the cursor to positions 9, 17, 25, 33, and so on. When you jump to a tab, or anywhere else on a line, you do not alter any characters between your starting point and destination.

Once you position the cursor where you want it, you can start making changes. To add characters, just type them in. The Shell is always in "insert mode," meaning all the characters on and to the right of the cursor move right as you type, creating a space for new characters.

To delete characters, press the Backspace key; it deletes one character to the left of the cursor. Each time you delete a character, the entire line to the right of the cursor shifts one character left. Press this key enough times and you delete every character to the cursor's left. Likewise, the Delete key deletes characters to the right of the cursor and then shifts the remainder one position left. Continuing to hit DEL deletes every character from the cursor to the end of the line.

While the Backspace and Delete keys quickly delete a few characters, certain multikey combinations let you delete many characters at once. CTRL-U (for undo) deletes every character from the immediate left of the cursor to the beginning of the line. To remove every character from the cursor to the end of the line, press CTRL-K (for kill). Finally, you can delete an entire line by pressing CTRL-X (for "X" it out).

Start Stopping

To use the Shell successfully, you might also want to know how to stop commands. Say you are looking for a specific file with the DIR command; once you see its name in your current directory, you might want to stop the list from proceeding. Also, if you incorrectly enter a command, you should be able to stop it before it does too much damage. When either situation occurs, press CTRL-C (C for Cancel). The line

**BREAK

appears, and the command you just typed stops.

Sometimes your problem is that the command is working too fast. If you type DIR with a hard disk, for example, the list of files scrolls by so quickly that you cannot read individual file names. Fortunately, if you press the space bar, you can temporarily pause the output of any command. When you are ready for the command to resume, just press the Backspace key; this deletes the space you typed and tells the command to proceed.

We'll have more on stopping output next month, plus some new Shell command tips. ■

Mark L. Van Name and Bill Catchings are contributing editors to AmigaWorld. *Write to them at 10024 Sycamore Dr., Durham, NC 27703.*

Sculpt-Animate's Scripting Language

By Marvin Landis

WHILE MOST PEOPLE create scenes in Sculpt-Animate 4D's (Byte by Byte, $499.95) interactive object editor, Sculpt also offers more powerful textual commands that you can combine into script files. In many cases, scripting is easier and faster than using the interactive editor, plus it gives you more precision for operations such as changing world attributes in multiple-scene files or creating objects of a specific size or color.

Before giving you some examples, I must explain a few conventions. After typing a script file into a text editor, you must save it with a .script extention before using it in Sculpt. To execute a script, choose Load Script from the Project menu and indicate the appropriate file name in the requester. Sculpt executes a script's commands in sequence, stopping only if it finds an erroneous command or reaches the end of the file. With the exception of the squash and stretch example, all the scripts presented should work with any version of Sculpt.

Scripting for Speed

Scripts can make repetitive pull-down menu calls more efficient. For example, I constantly change rendering modes and sizes when creating a scene. Switching among these modes normally requires choosing several options from the Observer menu, so I use the following two scripts instead. WireTest.script draws a wireframe of the current scene on a medium, non-interlaced screen:

```
WIREFRAME
NO INTERLACE
IMAGESIZE MEDIUM
START
```

FinalRender.script renders the current scene in overscan photo mode:

```
PHOTO
INTERLACE
IMAGESIZE JUMBO
ANTI ALIASING BEST
DITHERING 85
START
```

To conserve valuable disk space, you can save just the two-dimensional outline of an object, and then extrude it later with a script. For example, the commands below load the outline object called outline.scene from df1: into the west window at coordinate (0,0,0), extrude it to a thickness of 1000, and then fill one face of the object with triangles.

```
WINDOW WEST
DESELECT ALL
(0,0,0)
LOAD OBJECT "df1:outline.scene"
SELECT CONNECTED
EXTRUDE
(-1000,0,0)
GRABBER OFF
FILL
```

By multitasking Sculpt and your text editor, you can change the object specified, then reinvoke the script in Sculpt, loading and extruding many outline objects to the same depth in a short time.

Scripting for Precision

Scripts provide a convenient way to make precise changes to settings that are not easy to alter with the interactive editor. The following commands load a scene and change the observer's location to a specific coordinate. You could repeat these commands to load an entire animation and change the observer location consistently in all the frames.

```
LOAD SCENE "df1:frame1.scene"
(700,-2800,900)
LOCATION
SAVE SCENE "df1:frame1.scene"
```

►

Many of Sculpt's requesters use slide bars to set numeric values. The sliders have no precise measurements on them, however, making them difficult to set consistently in multiple scenes. The following sequence uses RGB values between 0 and 1 to accurately describe the colors for world attributes. The GROUND SCALE command lets you accurately size the squares on a checkerboard ground.

```
SKY SOLID .5 0 .5
GROUND SCALE 500
GROUND CHECKERED .6 .4 .2 .5 .25 .1
ILLUMINATION .35 .35 .35
```

Sometimes, creating an object with the interactive editor can be very difficult, even when you have the aid of the coordinate window. If you know the object's coordinates, you can use scripts to specify the object's edges or triangles using coordinates in the form: (west,north,up). The first command in the next script sets the number of decimal places used for coordinates to one. The coordinates are listed in pairs and describe the endpoints of edges forming an outline of the numeral 1. Notice that the second coordinate in each pair matches the first coordinate of the next pair, and the very last coordinate in the list matches the list's very first coordinate. This creates a closed loop exactly like the interactive Curve tool. Finally, the smoothing, FACE color, and texture commands control the triangle's attributes, while FILL creates the triangle.

```
COORDINATES 1
(-200,0,-600)-(200,0,-600)
(200,0,-600)-(200,0,-400)
(200,0,-400)-(100,0,-400)
(100,0,-400)-(100,0,600)
(100,0,600)-(-100,0,600)
(-100,0,600)-(-200,0,400)
(-200,0,400)-(-100,0,400)
(-100,0,400)-(-100,0,-400)
(-100,0,-400)-(-200,0,-400)
(-200,0,-400)-(-200,0,-600)
SELECT CONNECTED
SMOOTHING OFF
FACE COLOR .7 .7 .5
TEXTURE MIRROR
FILL
```

Squash and Stretch Animation

Now we'll pull together the concepts you've learned into a complete project: a script that creates a six-frame animation of a bouncing ball. As a teaching aid, I've broken the script into sections, but you should type it in as one continuous block. While the first statement is a LOAD command, Sculpt will create a new take if the file Bounce.take does not exist. The remaining commands in this section set the parameters of the take for generating the animation.

```
LOAD TAKE "df1:Bounce.take"
TAKE NUMBER OF FRAMES 6
TAKE SAVE IMAGES NO
TAKE LOOP OSCILLATE
TAKE CURRENT FRAME 1
TAKE KEY FRAME YES
TAKE DURATION 6
```

The next phase determines the rendering mode, world attributes, observer and target location, and the placement of the lamp in the keyframe scenes:

```
COORDINATES 1
PHOTO
INTERLACE
IMAGESIZE JUMBO
ANTI ALIASING BEST
GROUND SCALE 1200
GROUND CHECKERED 0 .4 0 0 .9 0
SKY GRADUATED 0 0 .2 0 0 .95
(0,0,715)
TARGET
(0,3900,715)
LOCATION
(8500,10000,8000)
ADD LAMP
```

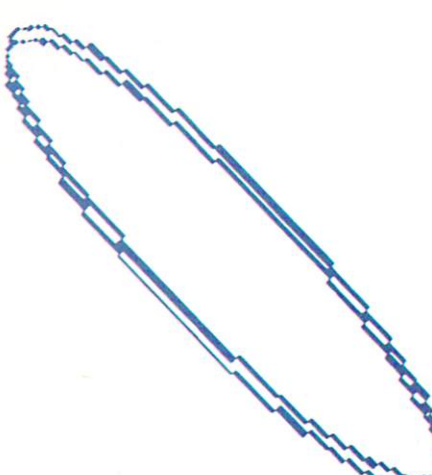
The script states the texture, color and initial position of the ball before we add the sphere. The ADD SPHERE command then specifies the sphere's radius of 200 units and its number of subdivisions to complete the first keyframe scene.

```
SMOOTHING ON
TEXTURE SHINY
FACE COLOR .8 0 0
(0,0,1410)
ADD SPHERE 200 2
SELECT CONNECTED
TAKE SAVE KEY FRAME SCENE
```

The ball falls farther in each successive frame, giving the illusion of speed as the ball approaches the ground. The GRABBER tool relocates the ball in each frame, and the EXPAND commands deform the ball, stretching it more as it gains speed.

```
TAKE CURRENT FRAME 2
TAKE KEY FRAME YES
GRABBER ON
(0,0,1360)
GRABBER OFF
EXPAND .98 NS
EXPAND .98 EW
EXPAND 1.04 UD
TAKE SAVE KEY FRAME SCENE
TAKE CURRENT FRAME 3
TAKE KEY FRAME YES
GRABBER ON
(0,0,1210)
GRABBER OFF ►
```

```
EXPAND .98 NS
EXPAND .98 EW
EXPAND 1.04 UD
TAKE SAVE KEY FRAME SCENE
TAKE CURRENT FRAME 4
TAKE KEY FRAME YES
GRABBER ON
(0,0,960)
GRABBER OFF
EXPAND .98 NS
EXPAND .98 EW
EXPAND 1.04 UD
TAKE SAVE KEY FRAME SCENE
TAKE CURRENT FRAME 5
TAKE KEY FRAME YES
GRABBER ON
(0,0,610)
GRABBER OFF
EXPAND .98 NS
EXPAND .98 EW
EXPAND 1.04 UD
TAKE SAVE KEY FRAME SCENE
```



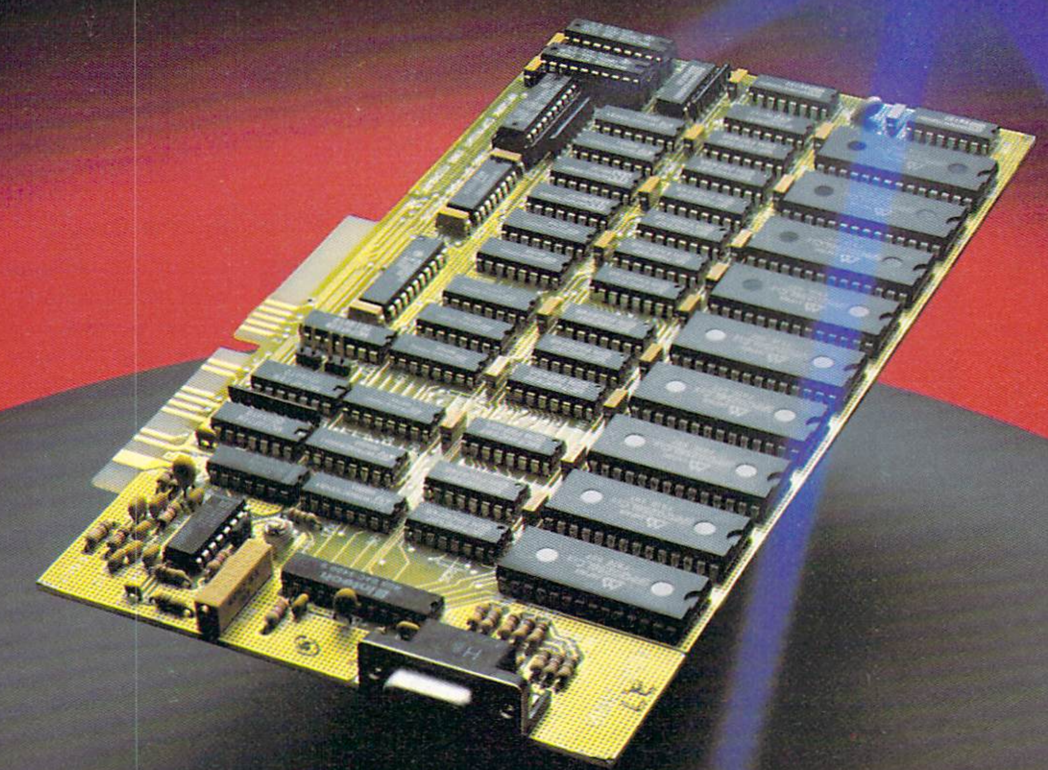
Finally, we erase the stretched ball, create a new ball that's the same size as the original, and then squash it as it hits the ground. After the last keyframe is completed, the program renders all the scenes and then loads and displays the animation.

```
TAKE CURRENT FRAME 6
TAKE KEY FRAME YES
ERASE SELECTED VERTICES
(0,0,160)
ADD SPHERE 200 2
SELECT CONNECTED
EXPAND 1.1 NS
EXPAND 1.1 EW
EXPAND .8 UD
TAKE SAVE KEY FRAME SCENE
TAKE RENDER ALL
LOAD ANIMATION "df1:Bounce.anim"
SHOW ANIMATION
```

If these suggestions only make you more curious about scripts, consult Chapter 14 of Sculpt's manual for a complete and lengthy list of the commands at your disposal. Every pull-down menu option has an equivalent script command, and Sculpt-Animate 4D scripts can even define macros for hot key capabilities. In addition, you can use programs written in BASIC, Modula-2, C or any other programming language to create scripts. With a little practice, you may wonder how you ever poked along using only the interactive editor. ■

Marvin Landis is systems analyst at New Mexico State University, where he works on Amigas, Macs, and IBM PCs. Write to him at AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*





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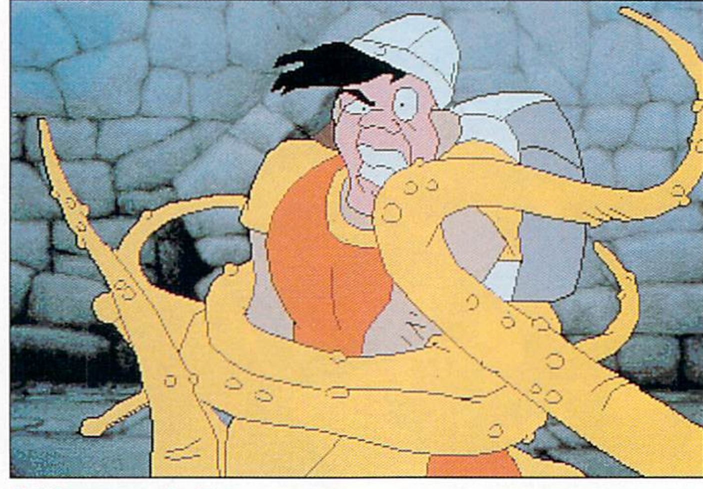
Escape from Singe's Castle

By Lou Wallace

SOMETIMES THE SEQUEL *is* better than the original. At least that's the case for Escape from Singe's Castle (Visionary Ltd.), the sequel to Dragon's Lair (ReadySoft). Once again, you play Dirk the Daring on a quest to rescue Princess Daphne, this time from the evil Shapeshifter who has hidden her in Singe's Castle.

As in the original, the game's graphics are spectacular, and play is fairly simple to master. In each sequence, you must move Dirk in one or more directions at exactly the right time to solve the puzzles and defeat the monsters. React too soon or too late, and Dirk dies. Because you have little flexibility in your choice of moves, timing is the key in the game. Master one sequence and you move on to the next, until you rescue Daphne or run out of lives.

Unlike Dragon's Lair, however, Singe's Castle has a real user interface and many user-friendly features. In Dragon's Lair, you could not save a game in progress. In Singe's Castle, you can save not one, but five games in progress. And you can also specify the number of lives you get and the game's difficulty level. In "cheat" mode, little signs appear telling you when to make your move and which direction or action you need to take—a big help when you first start to play.



A tight squeeze for Dirk.

While Dragon's Lair could be installed on a hard disk, it had to be in a special partition, and it supported only a couple of systems. Singe's Castle has no such restrictions. I tested it on several systems, and it operated very nicely from a standard subdirectory. The only copy protection is of the type-in variety.

According to the documentation, Singe's Castle will run on a 512K 68000-, 68010-, or 68020-equipped machine, but one megabyte or more of RAM is recommended. If memory is short, the game will disable certain features, such as Dirk's death scene and, if you wish, the sound. If you use sound on a machine with limited memory, there are more disk accesses, but the game will still play. If you have more than a meg, you will find that everything generally loads into memory at once, giving you uninterrupted playing for each sequence.

One of the best options of Singe's Castle is actually Dragon's Lair. You can link the two games together, giving you a game that is equal to the original laser-disc version! Once I linked and installed the games on my hard disk (with the built-in installation option), I found myself playing and enjoying Dragon's Lair, which I never thought would happen.

Singe's Castle is a visual delight, offering full-motion animated video in an arcade-game setting. I highly recommend it. *($69.95, Visionary Ltd., 15235 Shady Grove Rd., Suite 100, Rockville, MD 20850, 301/926-8300. Joystick required.)* ►

Crib Notes

By Peter Olafson

• It's fair to say that *Infestation* (Psygnosis, $39.95) is full of bugs. About 167 are gestating inside an underground base and waiting to turn you into primordial stew. Getting started in this big 3-D adventure is tough, but don't go to pieces. Wait until you find a teleporter. Use your jet pack to get off the ground. It'll preserve you, at least temporarily, from the rapidly approaching bugs and droids and give a better view of the surface. Look, in particular, for a stationary white pillar—the terminal activating the teleporter. I'll leave you to find the teleporter. Suffice it to say that it's appropriately portal-shaped.

Once inside the base, do not run around idly picking up objects. (Remember, some of these caches, such as oxygen, only top out a finite supply. Use the suit battery and air only when necessary.) Use the terminal in the landing bay to make yourself a map of the level, and then go egg-hunting. Check out those ventilation ducts, too. You won't go much of anywhere without an elevator card.

• *Dungeon Master* (FTL, $39.95) continues to give people fits. Brian Gentry of Manassas, VA has seen the writing on the wall down on Level 9, and it says, "When is rock not rock?" All I can say is: Nothing will get you through this riddle. We've all walked into enough dungeon walls accidentally so that walking into a few more on purpose won't make any difference, right?

• David Hancock didn't furnish an address, but his Amiga is parked in the catacombs under Venice, with a raised drawbridge blocking his path to the Cup of Christ in the graphic adventure version of *Indiana Jones* ►

TV Sports: Basketball

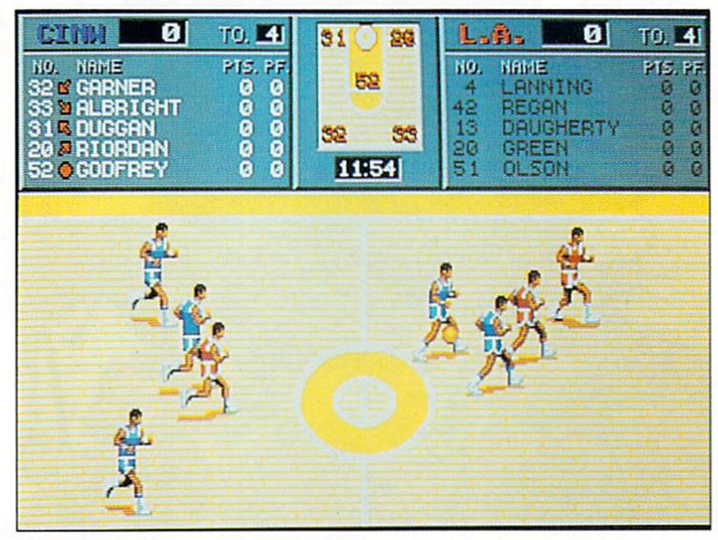
By Peter Olafson

AROUND THE RIM and in; Cinemaware has scored again. TV Sports: Basketball (TVSB), the second in the company's sports line, hits for a trifecta from downtown.

The two-disk program appears to have everything hoop fans want: a marvelous collection of digitized sounds that take advantage of expanded memory, a big statistical database, editable player abilities, computer-assisted passing, a role-playing mode in which you assume one player's identity, an instant-replay function, and excellent graphics.

You can play two-on-two or up to the full five-on-five, in quarters of 3 to 12 minutes. If you have a parallel-port adapter, you can even play with up to four joysticks. Join the 28-team league, and maybe you'll make the playoffs at the end of the abridged season. The only place the game makes bald concessions to the computer medium is at midcourt, where you lose control over the players, but gain the chance to set up plays.

Don't get too excited; TVSB isn't a perfect swish. It doesn't capture basketball's semi-liquid flow quite as well as SportTime's Omni-Play Basketball. For example, the players' movements have a certain robotic quality. Foul-shooting is equally curious: You must time your shot to the centering of a moving cursor on the backboard. Timing has virtually nothing to do with the art of the free throw, and I would prefer a more authentic arcade sequence that emphasizes aim and finesse.



All that's missing is the sweat.

TVSB is not easy to master, and you need continued practice at the lower skill levels. Novices will find player identification a tricky affair: There are twelve men on a squad, and players are identical to one another in appearance, if not in database. The passing mechanism to distinguish between them in the fray (an open player's number appears over his jersey, with the number's color indicating how open he is) is damnably clever, but relies too much on the game-player's memory. In advanced play, confusion can rule, and you may just be happy to pass to whoever seems in the clear.

I guarantee, however, that you'll enjoy practicing. *($49.95, Cinemaware, distributed by Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171. Joystick required.)*

Infestation

By David T. McClellan

THE NEWEST ADDICTION from Psygnosis, Infestation has a plot straight out of *Aliens*: You land on an airless moon, discover a way into a research station that has been taken over by Something Evil, and try to stay alive long enough to find and destroy all of the rapidly-hatching eggs and the Mother Something itself.

It is distinguished from the other alien shoot-'em-ups by the nifty 3-D soldier's-eye-view graphics, realistic sound effects, and the rich set of controls and environmental elements. The joystick controls offer two move- ►

and the Last Crusade (Lucasfilms, $59.95). Sounds to me, David, as though you didn't toy quite enough with that gear-and-pulley machine you discovered. Maybe you noticed it's broken. Suppose you have something that might fix it?

• Success early in *BattleTech* (Infocom, $49.95) can come from knowing when to cut bait and run. Myron Brownie of Ann Arbor, MI writes that you might want to sell the farm and take your money with you on your seventh or eighth training mission. If the opposing Mechs look especially nasty, cut out to the west. That'll give you a fighting chance of escaping the compound with a working Mech. If you're not so lucky and have to head for Starport on foot, make sure you're armed with an Inferno. It's an excellent anti-Mech weapon, and on troops. . .well, it's sort of like hitting ants with a hammer.

• The Cadorna Textile House is one of the nastier locales in *Pool of Radiance* (Strategic Simulations Inc. $49.95), what with those undead patrols. (The wights that lead them are level-drainers.) A party with a rogue can speed things up by investigating the well in the southeast corner. (Read the sign first, as this is also an easy way to kill off non-thief party members.)

Once you've done so, and tangled with the hobgoblin garrison, take a good long look at your booty for an item you'll need to free a nonplayer character. Don't forget to stop by on your way out to say thanks. You never know what helpful suggestions your new pals might make.

• First off in *Drakkhen* (Data East, $59.95), equip your characters; when the game starts, they're armed, but not yet dangerous. Don't tempt the shark in the castle moat on the way in; wait until this watchfish's back is turned (and he's still in sight). The way around the forcefields in the lobby is simply a matter of experimenting with what's available. Don't be in too much of a hurry to move on. Everything you steal reappears once you leave the castle, making it the ideal place to outfit your party on the cheap and build ►

ment modes—tactical for walking and shooting, and reconnaissance for tilting and rotating your head while walking. You need both modes. For example, ventilator grates are next to the floor, so you have to swivel your head down to find them. Your view is affected by whether or not you're standing or kneeling and whether you have your helmet on. Objects advance and recede as you move around. Robots rotate, and bolts fly out at you. You will even hear your air running out if you forget to refill your tanks or use your air/rad heads-up-display (HUD) to check outside air for breathability.

Once inside the multilevel station, you must walk through corridors, use point-to-point shuttles, take lifts between levels, and crawl through ventilator shafts to find the eggs, keys, air, batteries, cyanide, and so on that you need to finish the mission. Your helmet, as long as you have power, has seven selectable HUDs to keep you informed, including a NAV display that shows your grid position and orientation.

Terminals scattered through the maze of corridors will sometimes let you log in and check schematics of the station, but a hand-drawn map is invaluable. Take the time to write out a set of function-key and numeric-keypad labels, as well. All ten function keys perform operations (opening/closing doors, raising your visor, dropping cyanide, for example), and seven of the numeric keypad keys are tied to the HUDs.

I heartily recommend this combination of graphic-strategy and 3-D arcade action. Infestation will give you weeks of hair-pulling enjoyment. *($39.95, Psygnosis Ltd., 122 Century Building, Tower St., Brunswick Business Park, Liverpool, England L3 4BJ, 051 709 6466. Joystick required.)*

Typhoon Thompson in Search for the Sea Child

By Peter Olafson

IN THIS PORT of Dan Gorlin's latest gem, you (as Typhoon Thompson) are out to rescue a child who survived a plane crash at sea, then was found and adopted by sea sprites. Looking like tiny Bart Simpsons, the sprites inhabit a circular archipelago and pilot a variety of household appliance-like craft, each with a different gift for putting you out of commission.

You use your hovering jet-sled to shoot the islands and lure the machines, and then to shoot the machine themselves. Direct hits send the sprites on a dog-paddle search for land. You must catch them and stuff them in a bag. If the sprites reach land, the island regenerates and sends out more machines filled with sprites. Once you've collected the sprites from all seven islands, you can trade the bag to a fuming head sprite for a magical artifact (which must be returned to the Spirit Guardians for your next assignment).



Shoot to. . .rescue?

When you've allowed a few of the dolphin-like critters to escape, Typhoon Thompson becomes more a beleaguered lifeguard than a killing machine. If this is a shoot-'em-up, it's the most amiable one I've played in ages.

Typhoon Thompson contains some of the best small-figure animation and artwork I've seen in an Amiga game. Everything—the swimming sprites, the texture of and reflections on the water, the swishing movement of Typhoon's bag, the expressiveness of the sprites' faces—has been brought off with delicacy. The movement has a resemblance to ice-skating.

Play is equally pleasant. The mouse controls are responsive and economical, although two ►

up experience in killing low-level lizards. On the other hand, don't be too aggressive. You need some information from the castle's head liz—he's the biggest and has the gaudiest outfit—and you won't get it by busting heads.

- A number of people are stuck in the arcade/adventure quicksand that is *Shadow of the Beast* (Psygnosis, $49.95). This unannotated path from the base of the tree staircase will provide a couple of building blocks for deeper exploration: a key and a better weapon. (Depending on how it goes, you'll want to work the restoration potion into your busy schedule, too.)

You're in for a lot of down time. Namely, once you come off the staircase from the tree, head right, down, left, down, right, down, left, down, left, down, right, down, right, down, right, down. Find and descend a bamboo-ish-looking ladder, go left, go down another such ladder, and then left again at its mid-point. You'll find a pit. Jump it, and you'll find a key.

Now, into the pit with you, then go right, up both bamboo ladders, then up a regular ladder, left and down, and left again. Now get anti-social with the ball the statue is playing with. (It serves the little monster right.) There's your weapon. May you live long enough to use it. Head right to find the next stage. □

COMPANIES MENTIONED:

Data East, 1850 Little Orchard St., San Jose, CA 95125, 408/286-7074.

Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.

FTL Games, 6160 Lusk Blvd., C-206, San Diego, CA 92121, 619/453-5711.

Infocom, 3885 Bohannon Dr., Menlo Park, CA 94025, 415/329-0800.

Lucasfilms, distributed by Electronic Arts. (See address above.)

Psygnosis Ltd., 122 Century Building, Tower St., Brunswick Business Park, Liverpool, England L3 4BJ, 051 709 6466.

Strategic Simulations Inc., distributed by Electronic Arts. (Address above.)

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of the four weapons will require some practice to master. If you need help, the manual is Amiga-specific, a rarity for a conversion. On machines with one megabyte of memory, Typhoon Thompson uses true stereo sound intelligently to give you your opponents' positions. I wouldn't change a thing. *($34.95, Broderbund Software Inc., 17 Paul Dr., San Rafael, CA 94903, 415/492-3200. No special requirements.)*

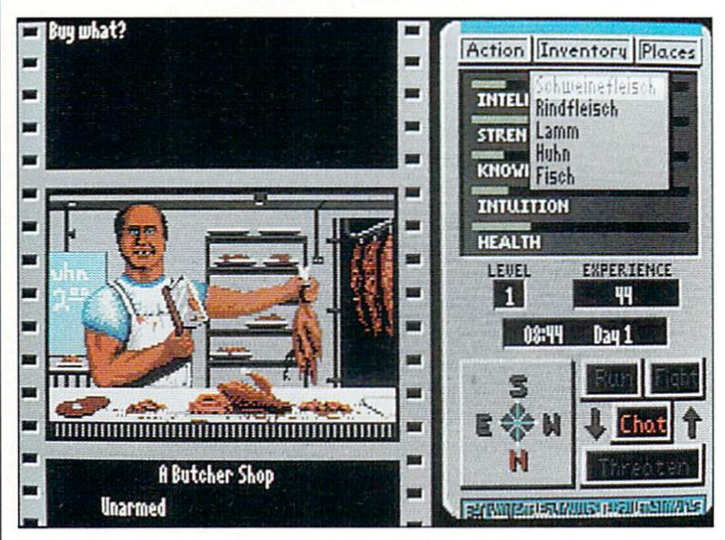
The Third Courier

By Rob Lawrence

THREE COURIERS WHO were headed for a top-secret conference in Brussels are missing. Each was carrying a crucial part of the NATO non-nuclear defense plans. Now two are dead, and the third has fled to Berlin and is planning to sell the components to the highest bidder. As an agent for the CIA, your mission is to recover the plans and eliminate the turncoat who swiped them.

Incorporating suspense, realism, and a touch of humor, The Third Courier is one of the most intriguing graphic adventures I've played. It has many of the qualities that a good role-playing game should have, such as an expansive locale to investigate and life-like supporting characters. Accolade went to great lengths to produce this one.

Before you begin, you must create a cover profile for your agent by providing details about the agent's background (occupation, life-style, and so on). The information you choose will determine your agent's physical and psychological traits. With the profile complete, you start the game in your West Berlin apartment. Aside from computer contact with headquarters, you're on your own.



Be kind to your sources, and they'll be kind to you.

The scenes are displayed in a window about one-fourth the size of the screen, and the rest of the area is used to outline your status, direction, and actions. The detail is excellent, right down to a realistic sense of time.

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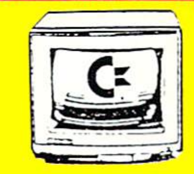
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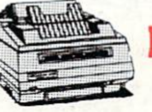
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ious drunks, and drug addicts are just some of the charming denizens you'll meet. Their slightly animated portraits are quite amusing, even if their personalities are not. Fortunately, you can obtain many types of weapons for "defense," should the need arise. Look hard enough, and you might get your hands on a Colt Python, or maybe purchase an UZI submachine gun from your friendly butcher. A number of high-tech spy gizmos are also available, including electronic bugs, lock picks, and infrared glasses.

Overall, The Third Courier is excellent. I recommend it highly to anyone who feels up to an international challenge. *($49.94, Accolade, 550 S. Winchester Blvd., Suite 200, San Jose, CA 95128, 408/985-1700. No special requirements.)*

THE HOUND OF SHADOW

By Dodson Yaple

AS AN ILLUSTRATED role-playing horror adventure, The Hound of Shadow takes you to England in the 1920s, where a chance visit to a phony seance leads you to the discovery of a monstrous realm in which Evil reigns.

You interact with the game by typing commands, but The Hound of Shadow does not play like a text adventure. Its parser is so rudimentary that you cannot engage in traditional adventure-game activities, such as solving puzzles and trying to kill all the other characters. Rather, the emphasis is on role-playing. Your task is to create a character with the skills and qualities necessary to make it through the scenario successfully. You do so by selecting a basic persona from various combinations of general qualities, and then distributing a fund of energy among 43 talents. This is the best and most detailed part of the game.

You need three disks to play: two game disks, and a user disk that you create to hold character information and saved games. Fortunately, swapping is manageable, even on single-drive systems. The disks are not copy-protected, so you can play with backups or from a hard drive, but you must periodically type in material from the manual to prevent the program from shutting down.

Intended as an homage to the horror fiction of H. P. Lovecraft, The Hound of Shadow does supply a few scary scenes of the ghastly fiend-from-hell variety. While its text is sometimes effective, the game fails to approach the standards of wit and polish established by the Infocom adventures. It contains little humor, and its many British references—at first quaint, then irritating—will impede most American players.

Audiovisual impact is negligible; there is no sound or music, and the sepia-toned graphics that illustrate the story, though often precise and photographic, are uninvolving and do not contribute to the game's solution. With neither superior writing nor flash and dazzle to carry it, The Hound of Shadow never builds much momentum. It tries hard, but this hound is a mutt. *($39.95, Eldritch Games Ltd., distributed by Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171. No special requirements.)* ■

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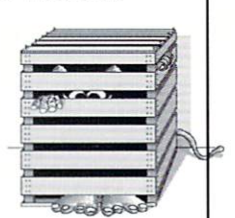
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from p. 16

Stream approach will suffice. Cost is certainly a factor here: Only two Compugraphic fonts are supplied with Professional Page. On the other hand, Pro Page provides direct support for the 35 resident fonts found in most PostScript printers; you'll have to pop for an optional disk of screen fonts ($99.95) to add this capability to PageStream. Both programs require significant amounts of memory and hard-disk space for efficient operation.

WHY BUY?

Gold Disk promises to add several of the PageStream features that Pro Page now lacks—such as rotation and style tags—to its next release. If you need a serious



I experienced many problems with PageStream 1.61, but version 1.8 is *great!* Too bad the program was not first released this way. It has better arc routines and file requesters now, and the program has yet to lock up my A2000. PageStream 1.8 is the new DTP heavyweight.

—***Chad Kielkopf***
Sturgis, MI

production tool, Pro Page's superior screen and font technology still give it the edge. Now that it's stable enough to actually use, however, PageStream is perfectly adequate for typographically less demanding applications and for less powerful systems. It is a capable performer that can make use of a large library of inexpensive bitmapped and PostScript fonts. PageStream is now a worthwhile publishing tool.

PageStream 1.8
Soft-Logik Publishing
11131F S. Towne Square
St. Louis, MO 63123
314/894-8608
$199.95
One megabyte required.

Editor's note: As we go to press, we have just learned that Soft-Logik has signed a contract to support scalable Compugraphic fonts. We look forward to reviewing PageStream's implementation of these fonts when version 2.0 arrives on the market.

DUNLAP UTILITIES

Toys for utilities fans

By Nancy Dryden Lorieau

DUNLAP UTILITIES IS a collection of multitasking tools and utilities that brings together a number of the more common functions—such as the screen-blanking and macro-key capabilities that are provided by independent programs—and in many respects it goes several steps further.

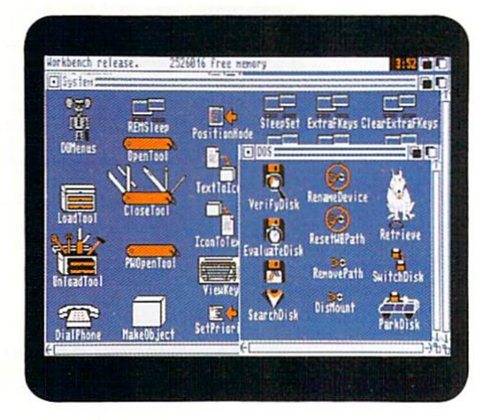
In all, there are 44 utilities, some with multiple features, on two non-copy-protected disks. Several programs are worth singling out. Among these are VerifyDisk, which verifies any disk, optionally mapping around bad blocks that render it unavailable, and thus letting you use imperfect disks with confidence. The Retrieve program attempts to recover deleted files and their icons. PlaySound plays a sequence of IFF sounds, including Fibonacci Delta compressed audio, for a specified number of cycles and seconds, and then removes the sounds from memory. (PlaySound can be attached to graphic displays.)

PerformEvent displays IFF ILBM pictures of all types, and lets you specify the number of seconds each frame will be shown (color cycling is optional). With DUExecute, you can issue any CLI sequence or command file from the Workbench via icons or windows. DUMenus provides additional menu functions for program execution from Workbench, while IcontoText simplifies the alteration of a program's execution by changing its Tooltypes text file.

The OpenTool program creates independent processes for Workbench tools, with full message passing and memory handling, plus resident tool execution. AccessText creates, displays and updates any window containing interactive text for menus, macros, and so on. ParkDisk removes a disk device from active service and parks the head in a safe location. With EvaluateDisk, you can determine a disk device's access speed, and, finally, with DialPhone you can send telephone-dialing commands to a modem through an AmigaDOS device.

BIG AND BULKY

Many of these programs are useful, and the entire collection seems virtually bug-free. I bought this package for the VerifyDisk tool and the ability it gives me to recover from a read/write error on my hard drive. It proved its usefulness during the first week. Because most of the programs are interdependent to some degree, however, you cannot insert them into your Workbench directory unless you have a significant amount of free space. Even hard-drive owners might prefer stand-alone programs.



A sampling of Dunlap's 44 utilities.

Dunlap Utilities does not have a professional look and feel. The program features a variety of cutesy icons, one of the demonstration examples is blatantly chauvinistic, and all program customization must be done by laboriously typing in filenames and paths. I was hoping for automatic menu generation and an elegant custom interface. Nevertheless, many of the package's tools are powerful and innovative.

READ/WRITE ERRORS

Dunlap's biggest shortcoming is its manual, which, while comprehensive, is poorly organized, often unclear, and assumes a solid level of expertise. If you are not an expert, proceed with care. Perhaps the most blatant example of this problem is in the second tutorial, where instructions are given for replacing the normal Workbench with menus by altering the startup sequence. In this process, one typing error could render a hard ►

drive inaccessible upon rebooting, but the tutorial does not warn you to save your original startup sequence by another name. No instructions are given for recovery in case of mishap, either.



The information on the Dunlap Utilities package influenced me to buy the program and heightened my expectations. I was displeased when I used the software, though. I was expecting something easy to master, but that is not the case. I am frustrated by how much setup is required to get things done. Many public-domain utilities are easier and faster to use. The only thing I really like about Dunlap Utilities is the large amount of devs, libs, and stack information it provides.

—*Chad Kielkopf*
Sturgis, MI

If you own a hard disk, I suggest you copy and rename your original startup sequence before altering it in Tutorial Two. Then, do not eliminate the LoadWB command until you have successfully completed the process of loading the menu program. As an extra precaution, keep on hand a separate Workbench disk containing a text editor. Then, if you do lose your interface, boot from your internal floppy drive with this disk and use the text editor to recover the correct startup sequence from the S directory of your boot partition.

If you know enough to avoid the documentation's pitfalls, Dunlap Utilities can be useful for customizing your Workbench environment—particularly if you do not have ready access to public-domain and shareware utilities. There's something for nearly everyone here, and, at normally discounted prices, the package represents an excellent value. Also, you can learn a great deal about your system just by working through the tutorials and experimenting with the programs. I'd like to see an update with a more businesslike feel and a professionally edited manual.

Dunlap Utilities
Progressive Peripherals & Software
464 Kalamath St.
Denver, Colorado 80204
303/825-4144
$79.95
No special requirements.

KCS 3.0 Level II

3 to get ready. . .now go!

By Steve Quinzi

DR. T'S KEYBOARD-Controlled Sequencer (KCS) 1.6, released about two years ago, offered MIDI sequencing and editing power previously unseen on the Amiga. It was unusual for an Amiga program—non-multitasking, cryptic, and ugly as can be, but it worked!

The latest update, KCS 3.0, supports not only Amiga multitasking, but also incorporates a proprietary multitasking environment called MPE (Multi Program Environment), originally designed for the Atari. MPE allows all Dr. T's programs—sequencers, patch editors, and so on—to share data and to run more efficiently together than they would under normal Amiga multitasking. The package includes KCS 3.0 (copy protected by the key-disk scheme), AutoMix (a non-copy-protected, fader-automation program), and a disk of demos. The optional Level II feature consists of a Master Editor and the PVG (Programmable Variations Generator).

KCS 3.0 is a full-featured MIDI sequencer with the same three basic modes of operation 1.6 provided. (For a review of KCS 1.6, see p. 16 in the August '88 issue.) In the Track mode, you can record up to 48 linear tracks in tape-recorder style. In Open mode, groups of tracks are combined into as many as 128 sequences, which can be played independently or can be used to control one another. Finally, Song mode arranges sequences end to end in various combinations.

While the setup is the same, however, version 3.0 adds numerous improvements and refinements. The Track mode

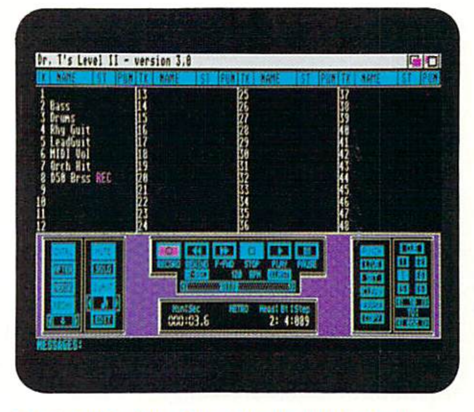
play/record screen now lets you see all 48 tracks at once. Fast Forward and Rewind buttons have been added to the sequencer's transport, and a single click on the Stop button now stops the sequencer at the current location, while a second click returns it to the beginning. There are six loop cues available, each of which you can set to loop the sequencer between the first beats of any two measures (these settings are stored with the .ALL file when you save to disk). The Go To Measure button cues the sequencer to any specified point. Tempo is now controlled by a slider with a range of 10 to 999 beats per minute, and location is expressed in measures, beats, and steps.

Most noteworthy is that Dr. T's has added pull-down menus. Most commands for shifting, merging, erasing tracks, and so forth, are now accessible from the Track Functions menu. Keyboard shortcuts are still available, and the program is packaged with a layover for the A500 and A2000 keyboards. Though the familiar Full Environment screen is intact, many of its options are now available between the Options and Environment menus. The MPE menu lists MPE-compatible programs running in the background; select one, and you are transported to it immediately.

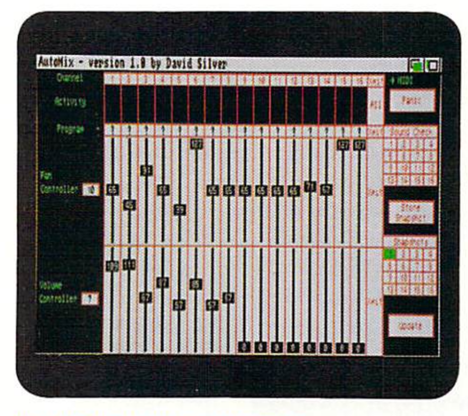
Specialties of the House

New entries on the menus include Edit Select, which turns the Punch-in control panel into the Live-Edit control panel. This allows you to do real-time editing in Track mode, erasing notes or changing velocity values while the sequencer plays. With Metronome Setup, you select whether the metronome click is directed to an internal sound or through MIDI. Phantom opens a box for controlling Dr. T's SMPTE synchronizer hardware of the same name. "Send to R8" lets you control the Fostex R8 (multitrack tape recorder which can slave to MIDI) from the transport buttons in Track mode.

AutoMix is a great addition. It consists of a single screen with two rows of 16 faders, corresponding to 16 MIDI channels. Each row can be directed to affect any controller. It defaults with the upper row set to Pan (Controller #10) and the lower set to MIDI Volume (Controller #7), but these can be changed. VU meters at the top of each fader column indicate activity in that channel, while a row



Track mode lays down many new features.



In AutoMix, faders really move.

of small boxes displays program changes. KCS and AutoMix work best together when Remote Control is selected. This eliminates the track-display area of the Track-mode play, allowing you to operate the sequencer while most of the AutoMix screen is visible. As the sequencer plays, you can use the mouse to adjust the fader positions, which KCS then interprets and records as continuous controller data. The faders are animated; they move on playback to reflect controller changes and any controller data recorded with a mod wheel or pedal.

The Edit screen is a lot easier to look at in 3.0. The arrows at the left of the screen that let you scroll through the event list are replaced by a solid scroll bar, which I like much better. And no longer do you have to flip through screens to find the one you want; most screens have buttons that take you directly where you need to go. Many commands have been moved to pull-down menus, alleviating much of the clutter that made the older version difficult to ►

read. The edit commands have been improved and moved to the Transform menu. You can now set upper and lower limits for velocity, duration values, and controller and pitch-bend data. I am disappointed that the Quantize function was not expanded, however; only straight quantization is offered, not quantization by percentage.

Track 1 is now considered the conductor track. Tempo change and SM (steps per measure) events must be inserted into Track 1 to be recognized. KCS now tracks SM events, so multiple meters are thoroughly supported. I wish there were some other way to effect meter and tempo changes. As it is, the only way to do a gradual tempo change is to laboriously insert tempo-change events (TM, AC, and DC) at intervals in the conductor track.

KCS 3.0 supports the Amiga's internal sounds: Selecting Internal Sounds opens a screen for assigning IFF instruments to the appropriate MIDI channels.

A Step Up

Level II, available on KCS 1.7, is implemented the same way in 3.0. The Master Editor offers six "pages" of editing features that complement those in the basic KCS edit screens. The first page, called Blend, allows you to match certain aspects of one sequence from a reference sequence. You can copy pitches, velocities, durations, or rhythms (either independently or in combination) from the reference sequence to the target sequence. The target sequence can also be autocorrected to match the reference sequence, as opposed to the common method of autocorrecting to a static quantization factor.

In the Chords page, sloppily played chords can be deflammed by lining up notes that are closer to each other than a specified number of steps. Chords can also be arpeggiated by a certain number of steps. You have the option of ascending, descending, or ascending/descending skip (the latter skips every other note on its way up or down, then returns to play the in-between notes). To keep things consistent, you can set the velocities and durations of every chord within the selected range to the same fixed value, or set each individual chord to equal its own maximum, minimum, or average value. Chord positions can also be rechanneled: Each note of the chord (up to ten notes) can be sent to a different MIDI channel.

The Controllers page can either remove various types of controller data from a track, or thin the data by percentage. The Tempo Changes page can change the values of existing tempo-change events in a track, while Track Utilities offers easy ways to open up space and delete areas of a track.

The Pitch Map can globally change any note to any other note within an 88-note range, and can change the velocity and MIDI channel of any note. An obvious application for this is the reconfiguring of drum tracks to match various drum-machine assignments. The great thing about the Pitch Map is its Save feature: You can make separate maps for different drum-sound sources and save them for convenient recall later.

Vary Very Good

The Programmable Variations Generator

(PVG) is a sophisticated editing environment that lets you make a variety of precisely controlled changes in prerecorded tracks or sequences. Any aspect of a track (MIDI note and controller data) can be independently randomized according to the probability factors you determine. Certain data can be protected from change, and the results can be restricted to meet your specifications. You can save the settings for each operation as a Preset, and for more complex operations, you can define up to 20 presets to act simultaneously or in some prescribed order as a macro. In fact, many PVG functions are so highly determinable that they can not only produce random variations, but also do extremely powerful editing tasks.

Changes, the first page in the PVG menu, produces random changes in pitch, velocity, duration, time, shift, or interval size in one of three ways: Constant, Signed (positive or negative), or Standard Deviation. The data types (pitch, velocity, and so on) are arranged in a column to the left of the screen, with columns labled Weight and Amount to the right. The values entered in the Amount column determine the size of the variation that will be applied to the corresponding data types; the value in the Weight column determines the probability that a particular variation will occur. The Changes per Vary option works with the values in the Amount and Weight columns to produce the desired number of variations in any operation.

The Restrictions box limits the results of an operation. For example, if you want your note variations to be diatonic to the key of C Major, just block out all the "black" notes so that only "white" notes are generated. Other restriction options include upper and lower pitch and velocity limits, minimum time between rhythmic variations, autocorrection, and duration limits. Multiple variations can be generated for each operation either consecutively, where each variation is based on the original source material, or evolving, where each variation serves as the source material for the succeeding variation.

Rather than generating new values, Swap/Copy creates variation by moving values for the data types around, within, or between the tracks or sequences. Once a second track is designated, PVG can swap and copy values from both tracks to arrive at a variation. A Protection function determines what data will not be affected by the operation. (This can be weighted on a scale from one to ten in terms of effectiveness.)

Set Values takes a different approach to variation. Rather than producing changes based on original values, it selects notes at random and changes them to a specific absolute value. This is set up much the same as the Changes page, except that the Amount column is replaced by a Value column, and it employs Protection rather than Restriction.

There are two pages for making global changes: Global 1 and Global 2. The former offers inversions, which mirror values across a center point, and transpositions, which set specific values or shift values consecutively by a given number of steps. Both offer the Protection function.

Split/Pattern is amazing. It actually analyzes your music, looking for pat- ►

terns, so that a particular note within a pattern can be flagged for editing. You can define a pattern of up to eight intervals that apply to either pitches or velocities. The intervals can be specific (select the equals sign below the appropriate interval value), general (select the greater- or less-than sign), or all-inclusive (select all three).

Instead of varying notes, Ornaments adds new notes to those on the track. You define up to ten ornamental pitches and their velocities, durations, channels, and delay times (number of steps away from the note being ornamented). The pitches, velocities, and durations can be either absolute or relative to the ornamented note. You can generate repeating ornaments, such as trills, by setting two ornamental pitches and looping them. The Shift command causes each iteration of the loop to change in relation to the previous one to produce different kinds of effects. The Protection function can protect any data range from ornamentation. You can also copy material from another track or sequence to use as ornamentation.

Add Controllers adds MIDI-controller changes, including continous-controller information, in much the same fashion as the Ornaments page adds notes. It has a Protection function to prevent certain data ranges from being affected.

Vary Controllers offers both single and global controller editing. It also has both Protection and Restriction functions and a feature that causes the Protection to be applied backwards.

You can save settings on each of these pages as presets, and KCS can hold up to 80 presets in memory at once.

THE RIGHT STUFF

This package is serious stuff. Without a doubt, Level II is the most extensive MIDI-editing environment I have seen. If you want to get into it, though, prepare to invest many hours. Even without Level II, KCS is probably the most powerful Amiga sequencer available. It's solid, with steady timing and virtually crash-free operation, and is definitely of the highest professional quality. It still won't win any beauty contests, though, and in future versions I'd like to see its power become more invisible. This would make it easier to concentrate on music, and turn KCS into an even more effective product.

KCS 3.0 Level II
Dr. T's Music Software
220 Boylston St.
Suite 206
Chestnut Hill, MA 02167
617/224-6954
$375
$275 without Level II option
No special requirements.

EDIT DECISION LIST PROCESSOR

TIME CODE READER/ GENERATOR

More decisions about lists and time code

By Wayland Strickland

VIDEOTAPE EDITING IS a very time-consuming task, and at rates of $100 and up per hour for an on-line editing suite, it can be expensive as well. To help ensure that you leave the edit suite with the shirt on your back, MicroIllusions has introduced the professional-level Edit Decision List Processor (EDLP) software and a companion hardware-and-software package, the Time-Code Reader Generator (TCRG-102).

STOP, LOOK, AND LIST 'EM

EDLP saves you on-line time by accepting all edit data—in and out points, video, and one or two audio tracks, (or any combination of these), plus switcher information, type of edit (a cut, dissolve, wipe, or key), and transition rate (in frames)—and translating that list into the format used by your production house's

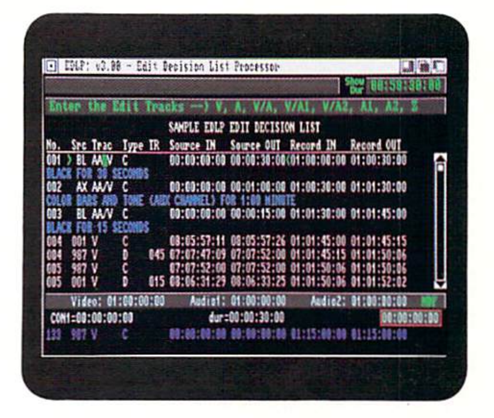
on-line editor. You can choose from CMX 216, 3400, and 3600, Grass Valley A12V and 4.1, and the United Media and Convergence's EMME formats. You can change the edit list format at any time, and once you have formatted a list, you can print it or store it on disk.

Most editors use either 3½- (360 or 720K) or 5¼- (360K) inch disks in MS-DOS format, and EDLP provides several utilities that make it easy to transfer lists to whichever of these you require. If the editor is near an Amiga, you can forget disk formatting and simply send the list to the editor through the serial port (a null-modem cable may be required). EDLP supports baud rates of 300, 1200, 2400, 4800, 9600, and 19,200.

Drop Frame (NTSC-29.97fps), Non-Drop Frame (NTSC-30fps), EBU (PAL-25fps), and Film (16/35mm-24fps) are the time-code types EDLP supports. You can stripe source videotape with any of these, and if you have several source tapes, each can have a different type of time code. The Record machine can be in any one of the five formats.

MAKING WAVES

After you add, delete, or change an event in an edit list, just select Ripple, and EDLP will recalculate the record machine's in and out points to allow for the change. The Renumber function, which, like Ripple, works automatically



EDLP speaks to editors with a list.

or manually, is useful when you have inserted several edits in an existing list. With Skip Record engaged, the program automatically advances the record-in point one frame from the last record-out point. Without this option, EDLP sets the record-in point to that of the last frame recorded, thus causing an overlap of one video frame. EDLP also supports comment lines, and converts them to the selected output format. The Strip Comments function removes all comments from the list.

EDLP supports block cut, copy, and paste functions similar to those of word processors, so you can easily move and copy events. With the Sort function, you can sort any column to find out, for example, the number of cuts or wipes in a list. The Event Lock feature is useful when two events must overlap, as is the case with a key or character generator. You can make Match Frame edits simply by using a single keystroke and typing in the appropriate dissolve information.

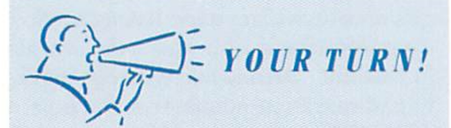
With the TCRG-102 Time Code Reader/Generator connected to the Amiga's serial port, any tape having audio channels striped with time code can play in real time. Meanwhile, you can mark in and mark out points from the tape, either at home using a VHS or Beta copy of the master tape, or in a properly equipped off-line (cuts-only) editing suite. EDLP can allow for reaction time so that if, for example, you are consistently two seconds late in pressing the mark-in or mark-out keys, it will subtract two seconds from the time the key is pressed.

One of EDLP's most impressive features is its Automatic Edit List Generator (AELG). To use it, first edit together your time-coded master tapes (or copies of them) in an off-line edit suite. Load EDLP, make an example edit, and then delete it; the deleted edit will go into the edit buffer, and AELG will take it from there to use as a template for the list to be generated. Select AELG and the software will log in all changes in time code and reel numbers (if applicable). Then, just add any dissolves or keys to the list.

The EDLP manual is very well written ►

and easy to read and understand. It includes a comprehensive glossary, a complete index, and a section that not only explains error messages in detail, but also offers solutions.

EDLP is supplied on two disks: a program disk and a utilities disk containing seven programs. Among the utilities are TimeCalc, which calculates time in frames or feet, and TimeManager, which keeps an accurate account of equipment usage and can generate an itemized-cost listing. I had no trouble multitasking with EDLP or using it with a hard drive. The on-disk Help function provides useful information at a mouse click.



TCRG makes beautiful window dubs. Its layout is simple and it does just what it promises to do—quickly, easily, and well.

—Mike Sedan
Burbank, CA

EDLP is a stable program that does its job well and is easy to use. I recommend it to anyone using a large editing system.

If You've Got the Money, Honey, We've Got the Time Code

TCRG is a hardware/software combination that can read time code from and write it to videotape. It serves an important function, because unless a videotape is time-coded, no computer editor can reference it. Time coding permits frame-accurate, and in some cases field-accurate, videotape editing.

The TCRG-102 can read and write SMPTE and EBU time code of the same types and rates that EDLP supports. Both SMPTE and EBU emit audible signals (much like a high-speed modem) when recorded to an open audio channel.

The TCRG-102 hardware unit is a small black box six inches wide, two inches high, and seven and a half inches deep. On the front panel are five LEDs indicating power, error, sync lock, video/sync input, and internal generation. On the aft end are three BNC connectors for video/sync input and loop-through, plus a color-frame input. There is an RS-232c (serial) port for connection to the Amiga, and two XLR connectors for



TCRG and EDLP have saved me money and contributed to better programs. They help me off-line a program cheaply and on-line it efficiently. It's much easier to manipulate EDLs with EDLP than with most on-line edit controllers. I'd like to see EDLP support the Paltex EDL format directly, although Paltex controllers will read CMX lists, and EDLP supports CMX formats.

Using TCRG to load time-code numbers on the fly directly into a word processor is wonderful. I look forward to getting a multiserial card so I can try TCRG with Music-X to lock MIDI sequences to SMPTE time code on the Amiga.

—Jamie Krutz
Ft. Collins, CO

sending and receiving time-code information. Finally, a bank of five dip switches lets you control baud rate, generator frame-count mode (when operating in free run), output (toggles between continuous-reader and reader/generator modes), and power.

All consumer and some industrial video equipment use RCA phono connectors for audio, and because no XLR-to-RCA phono cables are supplied with the unit, you must make or buy them to hook up your TCRG to VTR. (The manual contains instructions for making these cables.)

SHE CAME IN THROUGH THE CONTROL-PANEL WINDOW

The multitasking TCRG-102 software is composed of two parts. A monitor program simply reads time code from the TCRG-102 and makes it available to other programs (including ARexx and word processors), while a control panel provides access to all TCRG-102 functions via a window.

From this window, you can select a time-code type. TCRG-102 reads and writes SMPTE and EBU code in Drop Frame (NTSC-29.97fps), Non-Drop Frame (NTSC-30fps), EBU (PAL-25fps), and Film (16/35mm- 24fps) rates and types. Using other gadgets, you can synchronize the time code with the current time as read by the Amiga's internal clock, jam the time code from the reader into the generator, set all zeros, and set the time code manually. Here you can also set the user bits (an eight-character reference included in the time-code information) to incorporate other information such as the date, and so on. There are other gadgets for zeroing out this information.

The TCRG-102 can reference both its own internal time-code generator and an external video or sync signal. When you click on the Jam-user gadget, the time code from the reader is "jammed" into the user-bits generator and display window.

The most impressive feature of the TCRG-102 is its ability to make window dubs over video using just the Amiga and a genlock. Five character sizes, in all resolutions but HAM, are available for use in the window. (I found that interlaced high resolution looks best.)

Both the TCRG-102 hardware and software worked flawlessly in my tests. My only concern is the power supply—a typical 120-volt ac transformer that converts the line voltage to dc. Because the unit casing sits lower than the connection point, I had to apply pressure to the circuit from the back of the unit to make a successful power connection. This is of small consequence, however, and I recommend the TCRG-102 for its simplistic operation, its window-dub feature, and its comprehensive software.

EDLP
MicroIllusions Inc.
17408 Chatsworth St.
Granada Hills, CA 91344
818/360-3715
$499.95
Time-code reader required.

TCRG-102
MicroIllusions Inc.
$700
No special requirements. ►



BACKTALK

CANDID RESPONSES TO *AMIGAWORLD* REVIEWS

Music Mix

In his synthesizer editor article "Patchwork" (Mar '90, p. 26), Tim Tully claims that ". . .documentation is atrocious," but does not describe what "atrocious" means. Also, his statements ". . .the perfect program should let you play your synth, just as you would in a real situation. . .," and ". . .these programs give you no way to test a sound's response. . .," do not apply to our program. Our manual describes exactly how to set the program up to play the master keyboard through the computer without repatching. He also states that "Dr. T's lists a performance's patches here by name, there by number. . ." In fact, the program's patches *are* listed by name throughout.

—Al Hospers
Dr. T's

Your comparison of patch editors criticizes our programs for lacking a feature they have. Edited sound *can* be auditioned by playing the master controller via the right mouse button, as long as Merge or Rechannelize is selected on the System page.

—Erich Thaler
Dr. T's

The unindexed 4-Op Deluxe manual was written, as its title page states, "For the Yamaha DX-21, DX-27, DX-100, FB-01, and TX-812Z synthesizers and Atari ST or Commodore Amiga computers." It regularly intermixes instructions for one or various groupings of seven machines—a confusing setup.

I regret being unable to get the Merge function to work while I was writing the article, as I have found since that it does work.

—Tim Tully

Synchro Scope

In his review of 68030 accelerators (Mar '90, p. 12), Sheldon Leemon states that Imtronics' Hurricane 2800 "synchronous design makes it more sensitive to system timing. . .it can run only at an even multiple of the A2000's 7.1 MHz clock speed. . . approximately 28.4 MHz." In the same issue, Imtronics' ad descibes the board as "asyncronous" and "up to 33MHz."

—Otto von Ruggins
Brooklyn, NY

The ad you saw describes a different version of the H2800, one which was not available at the time. Imtronics is phasing out the synchronous model in favor of asynchronous design.

—Editors

Yakkity yak. . . *do* talk back! Send your comments on reviews to Back Talk, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. ■

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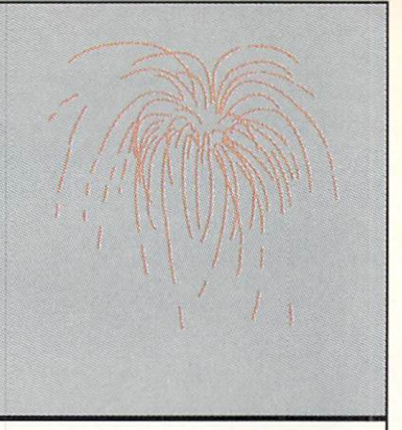
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WHAT'S NEW?

Paint your Amiga red, white, and blue; the fireworks display is on-screen this Independence Day!

Compiled by Jan Jackson

Stone Cold

CRYOGENIC SOFTWARE'S modeling package, **3-D Professional** ($499.95) comes loaded for bear. Its object-oriented 3-D editing and manipulation features include lathe, extrusion, and conic creation tools; fractal land and tree generation; and a number of 24-bit rendering techniques. You can also extrude Amiga fonts into objects. Object-manipulation tools include rotation, scaling, shearing, mirroring, slicing, merging, and splitting. For precise placement, you can configure the grid and grid-snap facility.

You can work in fully shaded or wire-frame environments and illuminate scenes with up to 99 light sources of variable color, intensity, and type. An alignment tool helps you join objects accurately, and an ARexx-compatible script language gives you numerous control options. 3-D Pro supports MicroIllusions' Transport Controller software for recording images to single-frame VTRs, and can output to Mimetics' 24-bit Frame Buffer. While the program accepts files in a variety of file formats, including AutoCAD, it saves in only its own format and that of VideoScape 3-D. Progressive Peripherals & Software (464 Kalamath, Denver, CO 80204, 303/825-4144) distributes the product and can answer your questions. *RS# 562.*



Illumination and textures with 3-D Pro.

Optical Outbreak

A RECENT FLURRY of activity amongst drive manufacturers indicates a rash of optical fervor...

The **XY600RW** ($5,245) from XYXIS Corporation (14631 Martin Dr., Eden Prairie, MN 55344, 612/949-2388) is a high-density, removable drive that's accessible via Commodore's A2090 and A2090A SCSI interface boards. Each $5^1/_4$-inch, ISO-format cartridge stores up to 600MB of data and can be erased a million times. Rewritable cartridges retail for $275. *RS# 563.*

The 570MB storage-capacity **OptiStor 600** comes preformatted with 10MB of public-domain software. Corwyn International (977 Seminole Trail, Suite 275, Charlottesville, VA 22901, 800/542-8505) added a control center with built-in power filter and surge and spike protectors. *RS# 564.*

The removable-SCSI **Mega-Drive** boasts a 600MB capacity and works with many controllers. Pricing and additional information is available from Impulse Inc. (6870 Shingle Creek Pkwy., #112, Minneapolis, MN 55430, 612/566-0221, 800/328-0184). *RS# 580.*

AND THEN SOME

FOR ALL YOU X-SHELL owners, **X-PLANNER** ($49) helps you draw floor and reflected ceiling plans. This screen-menu addition serves up a variety of drawing tools and includes libraries of standard bath, kitchen, ceiling, and door fixtures. Get in on the ground floor with Grafx Computing (6680 Wiltsie Rd., Panama, NY 14767, 716/782-2468). *RS#561.*

Convert bitmap images to Sculpt-Animate 4D (Byte by Byte) and VideoScape 3D (Aegis/Oxxi) formats automatically with **Pixel 3D**, an autotracing package from Axiom Software (1221 E. Center St. S.E., Rochester, MN 55904, 507/289-8677). For $89.95, Axiom promises color or monochrome conversions and full extrusion capabilities. *RS# 566.*

Acoustic Guitar, Doo Bell, Pipe Orgotron, and WhaackInDuhHead are some of ECT SampleWare's sampled sounds included in **The Internal Sounds Kit** ($59.95) for use with Bars&Pipes from Blue Ribbon Bakery (1248 Clairmont Rd., Suite 3D, Decatur, GA 30030, 404/377-2277), publisher of both programs. The kit, which lets you compose and create without MIDI, includes an input tool for entering notes, and an output tool, the AmigoPhone, that allocates simultaneous internal sounds. The AmigoPhone's Control window lets you adjust fidelity, tuning, modulation, octave shift, pitch bend, vibrato rate or depth, emphasis, attack, release, and volume for an unlimited amount of sounds.

You can create your own tools for Bars&Pipes with **Rules for Tools** ($59.95), a programmer's handbook. The book includes over 100 pages of source-code documentation and examples. *RS# 565.*

It's back to basics with **PETE** ($29.95), Programmable Electronic Teaching Equipment from Superior Software of Oregon (33813 E. Market Rd., Creswell, OR 97426, 503/895-4575). The program teaches children the alphabet as they select keyboard letters. PETE vocalizes letter names, and displays and identifies selected keys, using an on-screen keyboard representation. *RS# 566.* ►



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Public Domain Library

We are the **Offical Public Domain Library of Antic Amiga Plus**, we have been the **Offical PD library of Amiga World.** Find out why these magazines choose us! Each of our disks is chalked full of nothing but the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a **FREE** volume on your next purchase.

Featured Disk

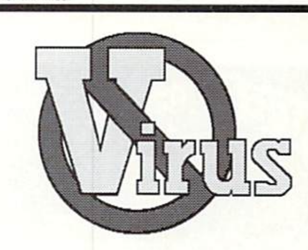
WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts off file minipulation. Also includes SID a real must have!

New Disks

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as froger, and SBreakout the original breakout with more.
FD28: Game! - This disk contains several great games including, DripGame - Sort of belongs to the PacMan type clone category but not exactly. This is truly a new and great original gaming idea. Very addicting, excellent playability, highly recommended. Pyramid - a Q-Bert type clone. Also, KingOil - a challenging board game where you are the leader of a wild cat oil team. Object - try and become another Exxon.
WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor much like NewZap, Lableprinter - a brand new Disk label printer with some of the most powerful features we have seen to date, each designed to give maximum control over what shows up on your labels.
WB27: Nagel - This disk contains 26 Patrick Nagel pictures of beautiful women.
WB28: Scientific - On this disk is MATLAB. MATLAB stands for MATrix LABoratory. It is a FORTRAN package developed by Argonne National Laboratories for in-house use. It provides comprehensive vector and tensor operations in a package which may be programmed, either through a macro language or through execution of script files.
WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractels from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything, we mean anything. Try this disk, you'll love it!
DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide, and Conman (1.4). ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.
DD56: UN*X #1 - Several Un*x type programs including Bison (2.0), Byacc(1.0),Gawk and M4.
DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and visa versa, IconJ - a new improved IconX clone, KillAgnus - disables 512k of chip ram, Also several utilities that improve your startup-sequence, plus 25 more programs.
DD58: Compression #2 - Tar - a unix type backup/archiver CompTool- cando stack to help with archiving, Convert - convert arc,zoo, and pak files to Lharc, Lharca99c - an intuition based Lharc, Lhunarc - a very fast unarcer, and Text - article on compression algorithms and source.

Other Great Disks

FD5: Tactical Games - BattleForce(3.0) see MechForce on FD20. BullRun - a Civil war battle game, Metro - you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very good Amiga version of Kingdom, Golden Empire, Etc. Very very habit forming.
FD6: GAMES! - This disk is chalked full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.
FD8: Games! - This disk is full of games, game hints and a few game editors (cheat programs) including: Antepenult - The best PD Ultima type going, GameEditors- Crystal Hammer, BardsTale, TV Sports Football, and FaeryTale, GameHints-These are: Zak McKracken, Shadow Gate, FaeryTale, Space Quest II, Dragon's Lair, and others.
FD9: Moria - a very well done port of an UNIX based character adventure game. This has great graphic controls, multiple spells, similar to Larn and Hack. Takes up the whole disk. Play time several days!
FD10: HackLite - A dungeon adventure game. Considered a must have classic. This is the second release of this game on the Amiga. Originally a UNIX game. Great Amiga graphic interface. Fills the whole disk. Play time several weeks!
FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.
FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arknoid/break out type game, Trix - a Qix type clone.
FD15: RayTracing #2 - You know those pictures you see with the highly reflective surfaces, thats raytracing. Learn about raytracing the inexpensive way with, DKBTrace and DBW_uRAY (micro raytracer). Source code included
FD16: Strategy Games - Includes Diplomacy and Empros, both great conquer and rule multiplayer games similar in concept to Simcity and Populas. Also includes blackbox, hearts, and others.
FD17: Educational Games - This disk includes several games for the younger memebers including geography, math, science, and word games, also includes Wheel of Fortune.
FD18: Arcade Games - Includes Bally a qix type clone, Billard a pool game, Paccers, a pacman game with screen editor, also Efj, a lunar lander type clone, and others.
FD19: Arcade Games - Raiders a space raiders clone that can be 3d compatible, Frenzy a shark feeding nightmare, VollyBall a good implementation, and Jar impossible to describe but fun game.
FD20: Tactical Games - MechForce(3.65); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim. This game is the full featured update to BattleForce(3.0) on FD5.
FD22: Arcade Games - This disk has MoonBase - The best lunar lander game we have seen in a long time, very challenging and addicting. Also BoingGame - a maze type, donkey kong type game.
FD23: Text Adventure Games - This disk is loaded with three great games, Adventure - this is an greatly enhanced version of the first AI game ever written on a computer! THE true classic even the genera was named after this game. JackLand - In the words of the arthur "This is a text adventure, set in the COMPLETELY FICTIONAL Atrashi Computer Company,. Also World and a adventure graphing/mapping program.
FD24:Strategy Games and Others - Includes Dicey, a yathzee type clone, MM a master mind type clone, Flipper an othello type clone, China an great implementation of Shangi, CircutWars a challenging game based on electronics, and Etrain a computer based model train set construction set for the enthusiast.
FD25:Tactical Games - Empire (133w)Empire is a rich simulation of international politics, economics and war, which is played over a period of a few of months by 2 or more people. Players can run their countries from the normal Amiga keyboard, or via a modem at 300 to 2400 baud.
FD0026:Arcade Games - Marble slide, truly this is a commercial quality game. Similar to a Lucas game named Plumming, excellent playablitly and entertainment, Mutants , a small version of the arcade game of the same name, also SuperBreakout a pong/arknoids type game.
WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220 terminal emulator, and JRComm (0.94a) another great com program.
WB5 - Fonts #1- Several fonts (35) for the Amiga, also included are five PageStream fonts and ShowFont - a font display program.
WB6: Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. AmigaDos fonts (some up to 56pts)
WB8: File Management - Great disk. UtilMaster - From your workbench move, copy, delete, read, show, edit, arc, run any command, and much much more!! Atree - similar to UtilMaster but hierarchal tree displayed. Also MachII - a must have mouse and keyboard enhancer, and Go - an ancient chinese game.
WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB10:Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).
WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and much much more. This version comes with the full user docs!
WB13: Printer Drivers and Generator - over 70 drivers, and if these don't do it, PrtDrvGen an easy to use program to make your own.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/schedular, a rolidex program, and pennywise a good "Cash Book" accounting for home or office.
WB17: General Utilities - Includes several interesting programs, DiskX - Great disk sector editor, Snap - Cut and paste text between different windows, Clean - defragment memory, also on this disk - calendar generator, diet program, workbench scrolling text, scale convertor, and many more.
WB18: Word/Text Processors - This disk contains the best editors that we could find. Includes, WordWright(v6.2) a full featured word processor with mail merge and outlining capacity, Dme(v1.35) a great programers editor with strong macro features, and TexED(v2.8) an enhanced Emacs type editor.
WB20: General Interest - On this disk is, DiskSalv V1.42 a disk recovery program for all Amiga file system, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook a program that gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer Originally prepared and released as a commercial product by Rapide, allows one to take a picture in 16 gray level format from a Digitizer system, then hand outline or Trace any part of that image.
WB21: Music - On this disk are several modern songs and a great Sonix music player, also a utility to remove the sound filter on500/2000.
WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.
WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, all aspects controllable, an greatly enhanced update to Plot on WB1, BezSurf2 is a program for producing bezier surfaces of revolution. It produces awesome pictures of objects one could turn on a lathe. Can also map iff image files onto any surface that it can draw. Now compatible with most 3D packages Update to Surf on WB1, and VScreen makes a virtual screen anywhere. For you DTP people this is a absolute must have, it allows full page editing without redraws!
WB24:Animation and Paint - On this disk, DA a complete commercial quality cell orientated animation package. Movie an "ANIM" player for standard animation. QuickFlix an IFF slide show and cell animation program. Also on this disk are two PD paint programs of good quality.
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any enter user global coordinate. This powerful program will zoom in or out to give you a satellite based map or a birds eye view. . Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples. PopCLI4 - The latest of a must have utility. ArpUserDocs3.1 - Finally, the documentation for the 3.1 release of Arp which replaces most 1.3 AmigaDOS commands (see dd44).
DD47: Pascal - This disk contains everything needed to program in pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.
DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.
DD50: ARexx #2 - a must have set of tutorials on ARexx and several useful examples and utilities for ARexx development.
DD51: Circut Analysis - Aspice (2.3) A full featured program for electric circuit analysis.
DD52: Scientific - This disk contains several great programs and C source routines for the scientist and science student. Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs, and FFT - fft C source.
DD53: Programing - This disk contains a complete forth implementation for the amiga. Also on this disk is DevKit - a collection of C and Arexx routines to aid in your software development.
DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excelent compression for IFF files.



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Born on the fourth of July, the **FireCracker/24** ($895) frame buffer offers 24-bit resolution and 16 million colors. Plug FireCracker into any 100-pin bus connector on the motherboard, and you can output in RGB, NTSC, and SVHS formats. The board comes with a paint program that lets you take advantage of 16 million colors in real time. Contact the patriots at Impulse Inc. (6870 Shingle Creek Pkwy., #112, Minneapolis, MN 55430, 612/566-0221, 800/328-0184) for details. *RS# 590.*

For 8- and 24-bit image processing, get in touch with ASDG's **Art Department** ($89.95). The package promises magazine-quality color separations from any image-data source up to 24 bitplanes. You can use the Art Department for layout of your desktop publications and for performing color-to-gray scale conversions to add resolution to images.

Select between thick and thin Ethernet with **LAN Rover** from ASDG Inc. (925 Stewart St., Madison, WI 53713, 608/273-6585). The board features DMA 16-bit data-path and on-card memory management and comes with a low-level general-software driver. *RS# 567.*

Take a peek inside **The Engineer's Toolbox, Vol. I—Graphing Tools**, the first in a promised series of incremental software packages for the scientist or engineer from Advanced Creations Inc. (PO Box 31818, Dayton, OH 45431, 513/427-5439). Volume I's three modules can be purchased individually: Aplot ($49.95) features a library of graphing functions written in Lattice C for applications programming. The ConvertAplot ($34.95) utility provides printing, plotting, and conversion capabilities, while GenAplot ($79.95), a collection of high-level plotting tools, helps you create charts and graphs. *RS# 568.*

Teachers, keep track of your students with **EZ-Grade** ($59.95), an electronic gradebook. The program calculates grading curves, prints individual or class progress reports, and maintains attendance records. For a comprehensive list of this TA's qualifications, contact Integral Software (2721 Embassy Row, Indianapolis, IN 46224, 317/297-7369). *RS# 569.*

Fans of Doug's Math Aquarium can explore fractal objects with **Mandelbrot Variations** ($24.95) from Seven Seas Software (PO Box 1451, Port Townsend, WA 98368, 206/385-1956). Mandelbrot Variations uses Binary Expansion, Continuous Potential, Scaled CPM, and differential angle and radius techniques, to name a few. *RS# 570.*

Court is in session at FairBrother & SoeparMann (5054 S. 22nd St., Arlington, VA 22206, 703/820-1954) with the release of **CourtRoom**. This educational game challenges you to sharpen your reasoning ability in courtroom scenarios and lets you review the rules of evidence used in actual legal proceedings. *RS# 574.*

Autoboot from your Commodore A2090 hard disk-controller with a **CSI 6100 Card** ($119) from Centaur Software (4452 Redondo Beach Blvd., Lawndale, CA 90260, 213/542-2226). Just plug the card into any 100-pin A2000 slot and you are ready to go: The driver and mountlist are stored in ROM. You can also boot directly from a FastFileSystem partition.

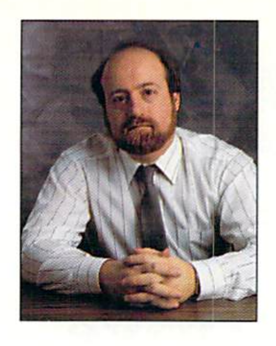
Give your A500 up to 4.5MB of internal RAM with Centaur's **MiniMax-4** ($179). You can purchase the board unpopulated or configured in 512K increments. An optional piggyback accommodates another two megs. *RS# 575.*

Central Coast Software (424 Vista Ave., Golden, CO 80401, 303/526-1030) reached its fourth down with **Quarterback 4.0**, the latest version of the popular hard-disk-management utility. With the new Print Catalog feature, you can create an archive report after completing a backup. If your system cannot handle fast backups, 4.0 lets you slow the process. An upgrade is available for registered owners for $10. *RS# 576*

The **HX68: 68030 Amiga Assembler** ($119.95) offers single-pass Metacompco-compatible macro assembly. It includes over 20 optimizations for 68010, 68020, and 68030 instructions and registers, and assembles to executable or standard Amiga object modules. A high-speed, BLink-compatible linker and a program-execution profiler are included. Connect with Lake Forest Logic (28101 Ballard Rd., Unit E., Lake Forest, IL 60045, 708/816-6666) for details. *RS# 572.*

INOVAtronics (8499 Greenville Ave., Suite 209B, Dallas, TX 75231, 214/340-4991) cut the ribbons on its assembler **C.A.P.E.68k 2.5**, which sports several improvements. Three external modules are included: HLink, an assembler-specific linker; Program Module Dismemberer, which disassembles code and data from object modules; and HProf, a profiler for pinpointing inefficient sections of code. *RS# 573.*

MicroSearch's new **Digitize Auto Cable** allows automatic color digitizing when used with The Electronic Color Splitter (MicroSearch), Digi-View (NewTek), and a composite color-video source. The cable's electronic assembly plugs into both the Color Splitter and Amiga's mouse port to provide automatic operation of Digi-View. Connect with MicroSearch (9896 SW Freeway, Houston, TX 77074, 713/988-2819) for more information. *RS# 579.* ■



HELP KEY

You learn something new with every column. . .and so does Lou, this time.

By Louis R. Wallace

FLIP SCREENS

Q: *As a new owner of an Amiga, I have discovered a weakness with some multitasking software. Some applications have no title bar that I can grab onto and drag down the program's screen to access the one running behind it. Often the programs don't have Front/Back gadgets either. What do I do?*

S. Golfinos
Astoria, NY

A: Sometimes the Front/Back gadgets are invisible, possibly because they are rendered in the background color. Try clicking in the upper-right corner where they should be. If that doesn't work, press LEFT-AMIGA-N simultaneously to jump forward one screen or LEFT-AMIGA-M to switch to the background program. Occasionally, software will lack a visible title bar or gadgets for good reason, but in a multitasking environment, well-behaved software should always allow you to access other applications.

ON TARGA

Q: *I have several IFF images I would like to convert to TARGA format so I can have slides made from them. (TARGA format has higher resolution than Amiga format.) Can I do this without spending a fortune on hardware? Also, I know companies are looking for PCs with color PostScript output, slide imaging with PMS colors, industry-specific software, and a machine that can display 256 colors in high resolution. My company just bought Macs, not Amigas, because the former can do all of the above. It's a shame Commodore doesn't upgrade the Amiga to at least this level of graphics.*

C. Hutchips
New Providence, NJ

A: With ImageLink, a software package from Active Circuits (106 Highway 71, Suite 101, Manasquan, NJ 08736, 201/223-5999), you can convert IFF images to TARGA format and vice versa. Keep in mind that if you start with an IFF image, the resulting TARGA image will be no better than what you started with, although ImageLink does have the ability to scale pictures. Of course, if the image was created with a 3-D rendering program that can save the picture as a 24-bit image file, the resulting TARGA picture would indeed look very nice.

If you want slides made from IFF images, you have the choice of several service bureaus. Philadelphia Video Lab (2212-14 Walnut St., Philadelphia, PA 19103, 215/567-3222) is well known in the Amiga publishing community for quality work with Amiga images. Hammond Photographic Services (11280 Washington Place, Culver City, CA 90230, 213/390-3010) can also create slides from IFF images, and offers an Amiga PostScript Slide service as well, taking color PostScript output from Gold Disk's Professional Page or Professional Draw and generating slides at resolutions up to 4000 lines.

As for PMS color support and more bitplanes, rumor has it that the next release of Gold Disk's Professional Page will support PMS colors. Other rumors out of West Chester indicate that Commodore is upgrading the graphic features of the Amiga to support more on-screen colors. This would involve some serious alterations of the custom chips, however, so don't expect results this year.

END AND CLOSE

Q: *I have an Amiga 2000 with one megabyte of memory and three drives. I activate a public-domain, screen-blanking program called Pyro 1.1 in my startup sequence with the command RUN Pyro 6000 (the 6000 is a timer value). Once I load Pyro, I can't close the CLI window, so I have to manually resize it and drag it out of the way. The CLI remains active and useful, but as long as Pyro is activated, the window won't close with a END-CLI command. Any idea why?*

A. Locane
New York, NY

A: Your problem lies in the way you start the file. Pyro, like may other programs started with the RUN command, is essentially attached to the CLI from which it was initiated. As long as it operates, you can't get rid of the CLI window. A good solution is to use the RUNBACK command instead of RUN. It does allow you to start a program and then close the CLI. In fact, that's exactly how I use Pyro.

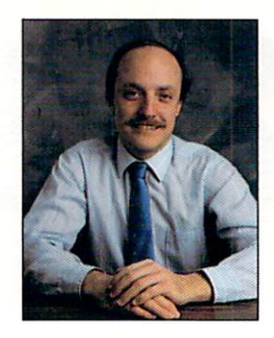
HELP KEY HELPERS

D. Bader's letter (April '90, p. 100) about scientific mapping software, prompted several letters:

Steve Carlson of Fayetteville, NY reports that he uses IBM commercial map data (from Illston PC-Programs, 1932 Hayselton Dr., Jefferson City, MO 65109) that contains latitude and longitude information on all US state boundaries, plus coordinates for 32,000 cities. He converts the data from degrees and minutes to coordinates and uses them with IntroCAD (Progressive Peripherals & Software). He would like to make an Intuition-interfaced map program and is looking for ideas. Drop a note to Help Key if you have suggestions, and I'll pass them along.

I also heard from Bassett Geographic (1103 Rudd Ave., Auburn, AL 36830), publishers of Choromap. A full-featured choropleth mapping package, Choromap lets you build a base map, input values for each area unit, and display the map in color. It will work with as little as 512K and sells for $48, plus $3 for shipping and handling. ■

Circle 148 on Reader Service card.



HORS D'OEUVRES

Hints, tips and techniques from your fellow Amiga users.

Compiled by Tim Walsh

Single Troubles

While experimenting with the Shell's ALIAS command in my Shell-startup file, I discovered that any single-character ALIAS command creates problems if an alias beginning with the same character precedes it. For example, when I ordered the commands in my sequence:

```
ALIAS cls ECHO "*E[0;0H*E[J"
ALIAS c CD c:
```

the system would not recognize cls as a command. The solution is to either place the single-character ALIAS command before other aliases beginning with the same character (c before cls), or not to use single-character ALIAS commands.

Robert Mayer Jr.
Weatherford, TX

Put IEEE to Work

Amiga Basic users with math coprocessors should take advantage of IEEE math libraries whenever possible, as their floating-point math provides a significant speed increase. To use AmigaDOS 1.3's IEEE libraries, you must use double-precision variables. Appending a pound sign (#) to a numeric variable identifies it as a double-precision variable. The following is an example of using the Sin function in the mathieeedoubtrans.library:

```
LIBRARY "mathieeedoubtrans.
  library"
' mathieeedoubtrans.bmap must be in
  LIBS: or current directory
DECLARE FUNCTION IEEEDPSin#
  LIBRARY
a#=1.57#
i&=PEEKL(VARPTR(a#))
j&=PEEKL(VARPTR(a#)+4)
b#=IEEEDPSin#(i&,j&)
PRINT " Sin("; a#: ")="; b#
```

As you can see, the process is not as simple as just calling the function with a double-precision variable. The libraries insist on having two parameters, each four bytes long. Thus, the eight-byte, floating-point number must be split into two parts in a way that pleases the libraries. The function VARPTR finds the address of the lower four bytes of a#. PEEKL then copies those bytes into the LONG Int variable i&. The same thing happens with the upper four bytes and j&. The two variables i& and j& are then passed to the IEEEDPSin function, which returns a double-precision result. The program places i& in the microprocessor's D0 register and places j& in D1. To learn more about these libraries, study Appendix F in the Amiga Basic manual, and the appropriate .bmap and .FD files.

Jim Boutelle
Pompton Lakes, NJ

Say That Again

Listening to a recording repeatedly is a proven way to commit information to memory, and using your Amiga's speech capability will save you of a lot of cassette tape rewinding. Just use a text editor to enter the script you want your Amiga to recite, enter the program below into Amiga Basic, and let your computer do the talking.

```
DIM params%(8)
FOR t=0 to 8
  READ params%(t)
NEXT
ON TIMER (45*60) GOSUB finish
:REM sets timer to end at 45 minutes
TIMER ON
again:
OPEN "your-script" FOR INPUT
  AS #1
:REM place the name of your script
  here
WHILE NOT EOF(1)
INPUT#1,a$
SAY TRANSLATE$ (a$), params%
:REM here's where the Amiga speaks
WEND
CLOSE #1
GOTO again
finish:
END
DATA 110,0,115,0,22200,64,10,0,0
```

:REM the parameters used reflect: pitch, inflection, rate, gender, tuning, volume, channel, synch mode, and asynch mode.

James Nakakihara
LaPalma, CA

Wait Your Turn

While using the Shell's RUN command to execute scripts within scripts seems like a multitasking time saver, it can slow you down if both scripts need to access the same device. For example, if both of your tasks try to access the same disk, they may interrupt each other and add to the drive head's travel time, making the process less efficient. A solution is to make one task's commands resident in RAM (with the RESIDENT command), which will eliminate competition for accessing the Workbench disk. Multitasking scripts works best if one task interacts with the user. Remember, your Amiga can do a lot between keystrokes.

Steven Lambing
Huntsville, AL

If you have an idea you'd like to share with our readers, send it to Hors d'oeuvres, AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458. If your idea gets published, you'll receive an* AmigaWorld *surprise gift.* ■

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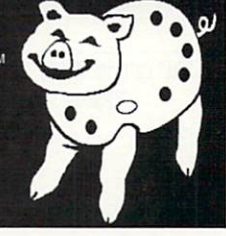
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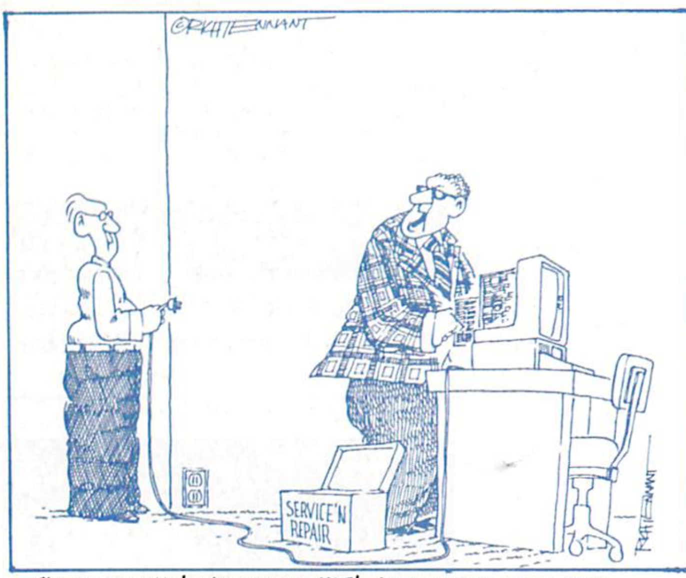
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ASK AGNUS

Amiga owners may have the best computers, but they have problems, too. Here to solve our readers' most troubling dilemmas is Agnus, an advice giver with a real chip on her shoulder.

Q: Recently, I became an executive at Atari. What is my expected tenure based on statistical data?

Q. Moenk
Las Vegas, NV

A: Dear Moenk,
We tried to reach you directly at Atari, but were told that you had resigned for "personal reasons." We also received your resume, and will keep it on file. (Yeah, right.)

Q: I paid about $10,000 to get an IBM Model 70 with an Intel 80486 running OS/2 with 14M-bytes of RAM and a 150M-byte streaming tape backup. Can you think of any exciting applications I could use this system for?

Alexander Rushby
Spokane, WA

A: Have you tried Word Processing?

Q: I'm a 14-year-old who shipped my Amiga to the nearest Authorized Commodore Service Center. They claimed it never arrived. I asked the courier to trace the package. They couldn't find it, but said I owed them shipping. What gives?

A. Clarke
Butte, MT

A: Ask your mom for a ride to the nearest state college library and check the law books for Uniform Commercial Code, Part 3/Bills of Lading, Special Provisions, Section 7-307, paragraph (1): "A carrier has a lien on the goods covered by a bill of lading for charges subsequent to the date of its receipt of the goods for storage or transportation (including dumurrage and terminal charges) and for the expenses necessary for preservation of the goods incident to their transportation or reasonably incurred in their sale pursuant to law." Translation: Pay up.

Q: I spend a lot of time with my Amiga. In fact, my wife has threatened to leave me if I don't get rid of it. What should I do?

Walter Gibson
Feeding Hills, MA

A: Buy another Amiga.

Ear to the Wall

Who's Who. For those of you keeping track of Commodore execs, sharpen your pencils and pay attention: As we've already mentioned, Jeff R. Scherb is now Vice President of Commodore Applications and Technical Support (CATS), and former CATS General Manager Gail Wellington has been appointed Director of Special Projects for Commodore International. The following list of more recent promotees appeared recently in Commodore's *Amiga Mail Market*: Jim Reader is now Vice President of Customer Satisfaction; Walt Simpson, Director, Product Marketing; Tom Kilcoyne, Director, Marketing Communications and Consumer Marketing; Ken Christie, Manager, Multimedia Marketing; and Paul Calkin, Corporate Program Manager-Unix.

040 already?!? Our spies have reported sightings of an Amiga 3000 sporting a Motorola 68040 chip and running at about 15MIPS. This is the first machine we're aware of that has used the still-unfinished Motorola blazer.

The Amiga 3500 is getting close, say those in the know. This is essentially a tower version of the Amiga 3000, providing more drive bays and slots. It can also slip under the desk, clearing the way for lots more junky paperwork.

It's two, two, two operating systems in one! The latest skinny on DOS 2.0 is that it is almost, but not quite, finished. As a result, look for the A3000 to ship with the ability to load either 1.3 or 2.0.

In other Big C news, Washington, DC is now HQ for Commodore Federal Systems Group, established to market products to government agencies. A contract has reportedly been signed with a distributor to carry Commodore products to US agencies worldwide.

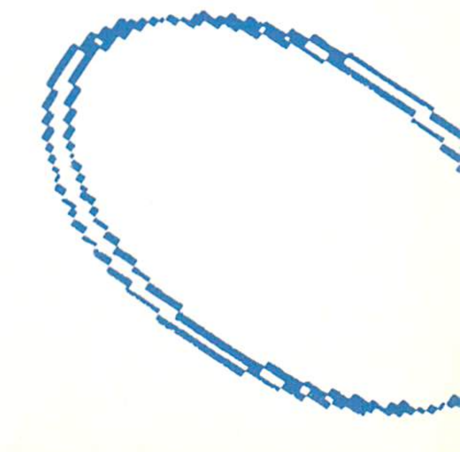
On the home front, we can expect to see A500s in the "consumer channel," as Commodore likes to put it. Indications point toward Montgomery Ward as a distributor for a spiffily packaged CPU sans monitor, with a fairly affordable price tag.

All Amigas purchased as of January 2, 1990, are backed up with a one-year warranty instead of the 90-day warranty previously in place.

I Dream of GEnie. . . GEnie, the on-line service of General Electric, will be showing off some GE-developed Amiga software sometime soon.

It's A LIVE! If you have been unsuccessful in reaching A-Squared, manufacturers of LIVE!, a video board necessary for running Mandala (Very Vivid) and Elan Performer (Elan Design) multimedia programs, your concerns should be assuaged by the time you read this. According to reports, the demand for LIVE! recently increased sharply, and A-Squared found it necessary to concentrate on pure production to fill orders already in place. There will soon be A2000 boards aplenty, and you'll again be able to commune with A-Squared.

Speaking of Mandala, Very Vivid is accepting petitions for non-commercial considerations. A company representative recently told *AmigaWorld* that Mandala is licensed for developmental and educational applications only, while a related product, Interactor, is available to all.



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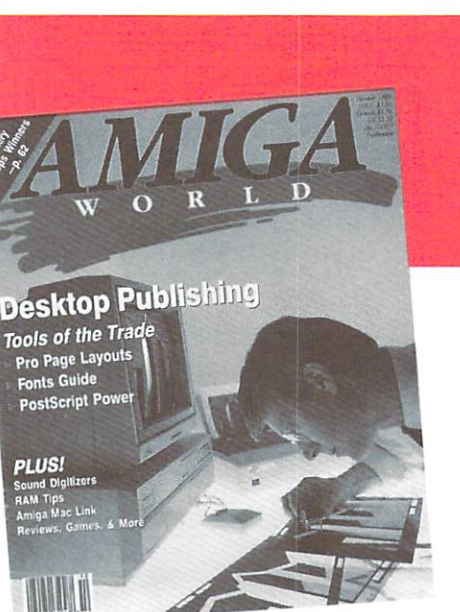
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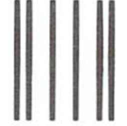
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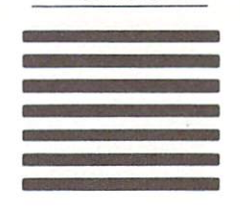


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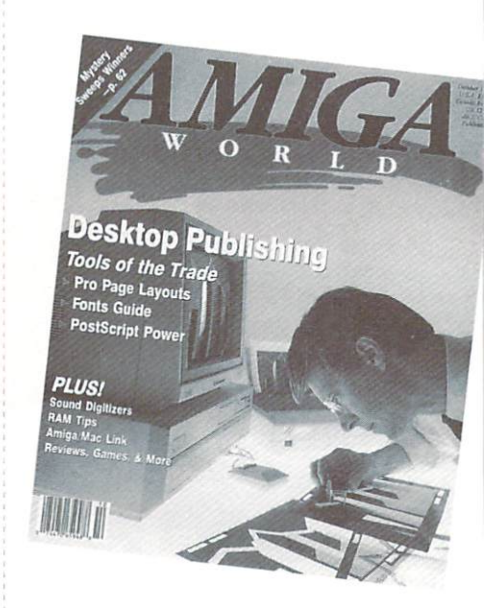
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Just The Facts:

What Makes Digi-Paint 3 the Ultimate Paint Program?

"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."

Laura Longfellow
Sales Manager
NewTek Inc.

"Why is Digi-Paint 3 better than DeluxePaint III™?"

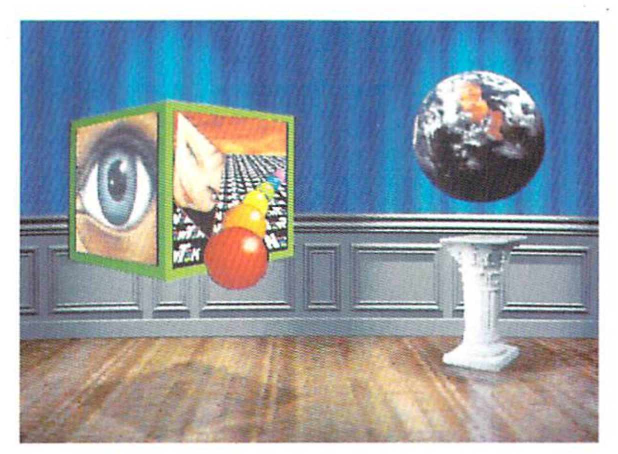
Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3 – including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting – are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"

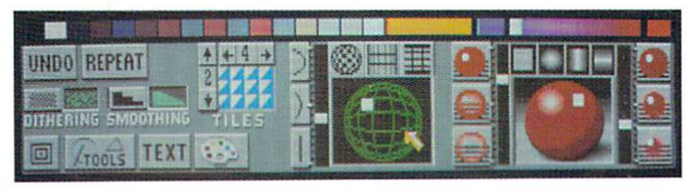


"What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"





"But is Digi-Paint 3 easy to use?"

I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind – from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".



"What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."

"What technical support does NewTek offer?"

Digi-Paint 3 has one other thing you won't find in any ordinary paint program: a toll-free help line. If you should have any questions while using Digi-Paint 3, you're not on your own. Call NewTek's technical support team at 1-800-736-7617 Monday through Friday, 8 am -7 pm Central Time.

Digi-Paint 3 is available now at your local Amiga dealer or call
1-800-843-8934 or **1-913-354-1146.**

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